RICOH UNIVERSITY
Learning ◆ Knowledge ◆ Performance

M052/M053/M054
SERVICE MANUAL

LANIER RICOH savin

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Ricoh Americas Corporation

LEGEND

PRODUCT CODE	COMPANY		
	LANIER	RICOH	SAVIN
M052	SP5200S	Aficio SP5200S	SP5200S
M053	SP5210SF	Aficio SP5210SF	SP5210SF
M054	SP5210SR	Aficio SP5210SR	SP5210SR

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M052/M053/M054

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M052/M053/M054 SERVICE MANUAL APPENDICES

SEE M052/M053/M054 SERVICE MANUAL APPENDICES SECTION FOR DETAILED TABLE OF CONTENTS

FAX OPTION TYPE SP5200 (M381)

SEE M381 SECTION FOR DETAILED TABLE OF CONTENTS

PAPER FEED UNIT TK1090/TK1100/TK1120/TK1130 (M375/M376/M386/M389)

SEE M375/M376/M386/M389 SECTION FOR DETAILED TABLE OF CONTENTS

READ THIS FIRST

Safety Notices

Important Safety Notices

Prevention of Physical Injury

1. Before disassembling or assembling parts of the machine and peripherals, make sure that the machine power cord is unplugged.
2. The wall outlet should be near the machine and easily accessible.
3. If any adjustment or operation check has to be made with exterior covers off or open while the main switch is turned on, keep hands away from electrified or mechanically driven components.
4. The machine drives some of its components when it completes the warm-up period. Be careful to keep hands away from the mechanical and electrical components as the machine starts operation.
5. The inside and the metal parts of the fusing unit become extremely hot while the machine is operating. Be careful to avoid touching those components with your bare hands.

Health Safety Conditions

Toner is non-toxic, but if you get either of them in your eyes by accident, it may cause temporary eye discomfort. Try to remove with eye drops or flush with water as first aid. If unsuccessful, get medical attention.

Observance of Electrical Safety Standards

The machine and its peripherals must be serviced by a customer service representative who has completed the training course on those models.

- The Controller board on this machine contains a lithium battery. The danger of explosion exists if a battery of this type is incorrectly replaced. Replace only with the same or an equivalent type recommended by the manufacturer. Discard batteries in accordance with the manufacturer's instructions and local regulations.
- The optional fax and memory expansion units contain lithium batteries, which can explode if replaced incorrectly. Replace only with the same or an equivalent type recommended by the manufacturer. Do not recharge or burn the batteries. Used batteries must be handled in accordance with local regulations.

Safety and Ecological Notes for Disposal

1. Do not incinerate toner bottles or used toner. Toner dust may ignite suddenly when exposed to an open flame.
2. Dispose of used toner, the maintenance unit which includes developer or the organic photoconductor in accordance with local regulations. (These are non-toxic supplies.)
3. Dispose of replaced parts in accordance with local regulations.

⚠WARNING

- To prevent a fire or explosion, keep the machine away from flammable liquids, gases, and aerosols. A fire or an explosion might occur.

Lithium Batteries

Incorrect replacement of lithium battery(s) on the FCU, controller board and memory board unit may pose risk of explosion. Replace only with the same type or with an equivalent type recommended by the manufacturer. Discard used batteries in accordance with the manufacturer's instructions.

Laser Safety

The Center for Devices and Radiological Health (CDRH) prohibits the repair of laser-based optical units in the field. The optical housing unit can only be repaired in a factory or at a location with the requisite equipment. The laser subsystem is replaceable in the field by a qualified Customer Engineer. The laser chassis is not repairable in the field. Customer engineers are therefore directed to return all chassis and laser subsystems to the factory or service depot when replacement of the optical subsystem is required.

⚠WARNING

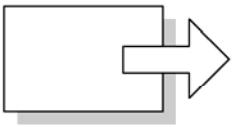
- Use of controls, or adjustment, or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

⚠WARNING
WARNING: Turn off the main switch before attempting any of the procedures in the Laser Optics Housing Unit section. Laser beams can seriously damage your eyes. **CAUTION MARKING:**   3b_laser

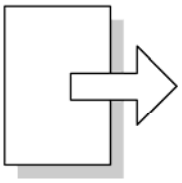
Symbols and Abbreviations

This manual uses several symbols and abbreviations. The meaning of those symbols and abbreviations is as follows:

☛	See or Refer to
	Clip ring
	E-ring
	Screw
	Connector
	Clamp
SEF	Short Edge Feed
LEF	Long Edge Feed
-	Core Technology manual



Short Edge Feed (SEF)



Long Edge Feed (LEF)

Cautions, Notes, etc.

The following headings provide special information:

⚠WARNING

- Failure to obey warning information could result in serious injury or death.

⚠CAUTION

- Obey these guidelines to ensure safe operation and prevent minor injuries.

Note

- This information provides tips and advice about how to best service the machine.

PRODUCT INFORMATION

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

1. PRODUCT INFORMATION

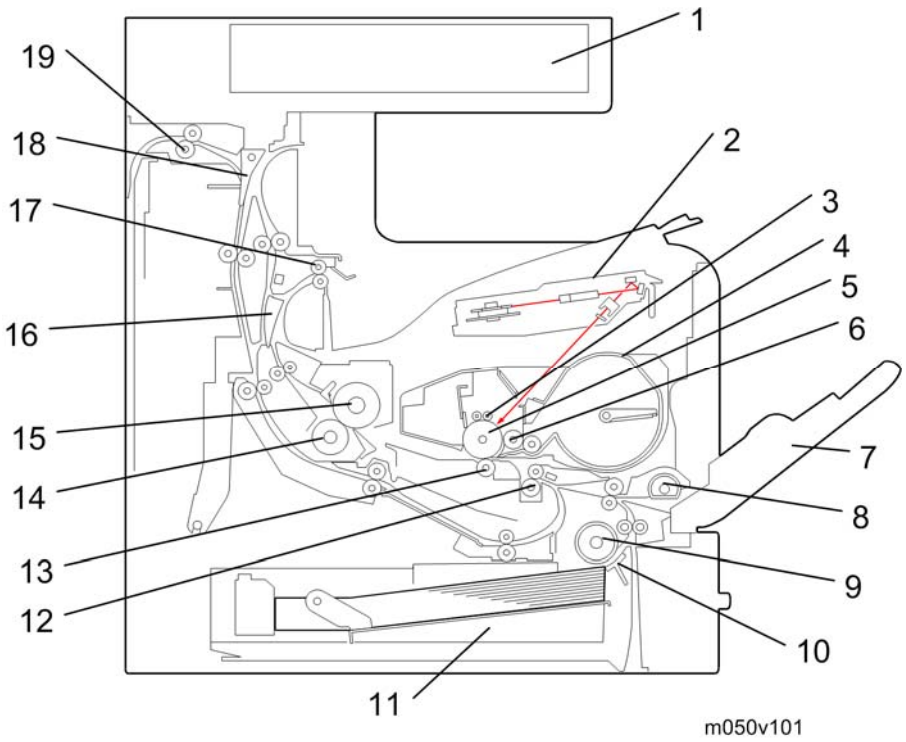
1.1 SPECIFICATIONS

See "Appendices" for the following information:

- General Specifications
- Supported Paper Sizes

1.2 OVERVIEW

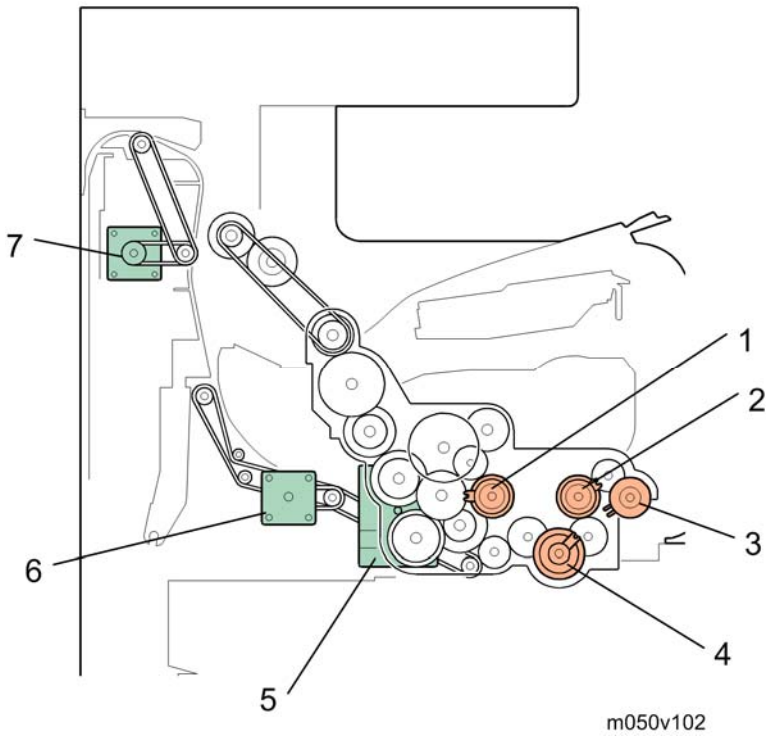
1.2.1 MECHANICAL COMPONENT LAYOUT



1. Scanner unit 2. Laser unit 3. Charge roller 4. Cartridge (AIO-type) 5. Drum 6. Development roller 7. By-pass feed tray 8. By-pass feed roller 9. Paper feed roller	10. Friction pad 11. Paper tray 12. Registration roller 13. Transfer roller 14. Pressure roller 15. Hot roller 16. Junction gate 1*[1] 17. Paper exit roller*[2] 18. Junction gate 2*[3] 19. Inverter roller

- *[1]: Junction gate 1 is not movable for the finisher model (M054).
- *[2]: Paper exit roller is not used for the finisher model (M054).
- *[3]: Junction gate 2 is not movable for the standard model (M052).

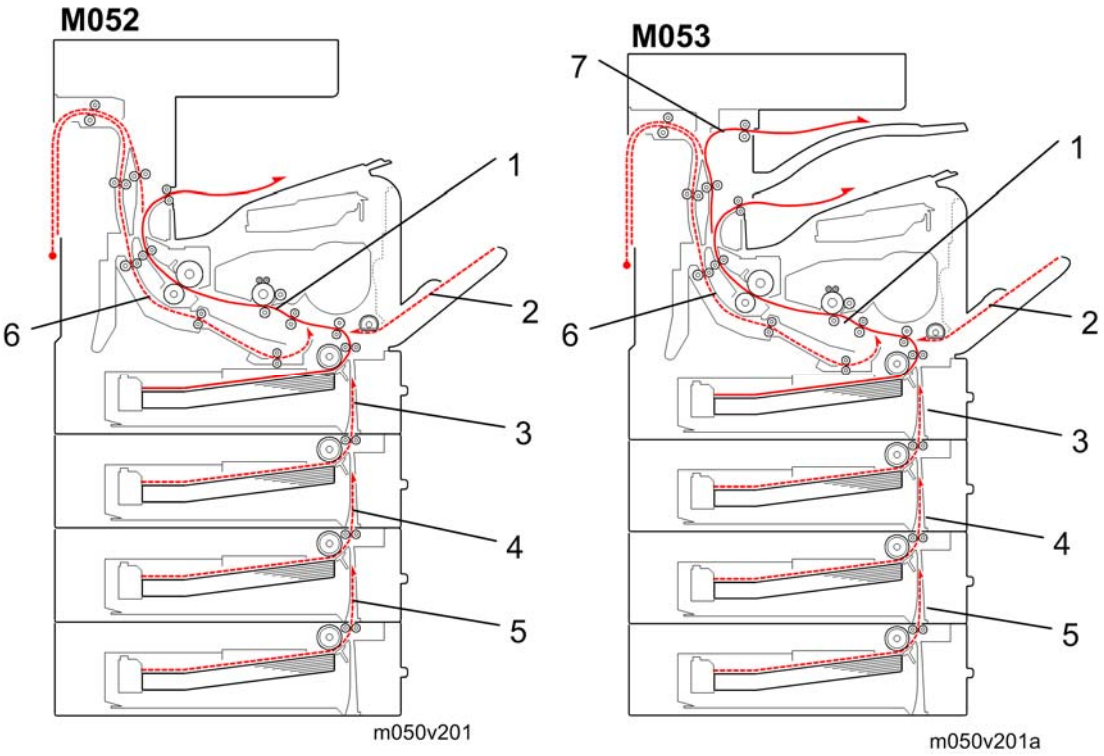
1.2.2 DRIVE LAYOUT



1. Registration clutch
2. Relay clutch
3. By-pass clutch
4. Paper feed clutch
5. Main motor
6. Duplex motor
7. Inverter motor

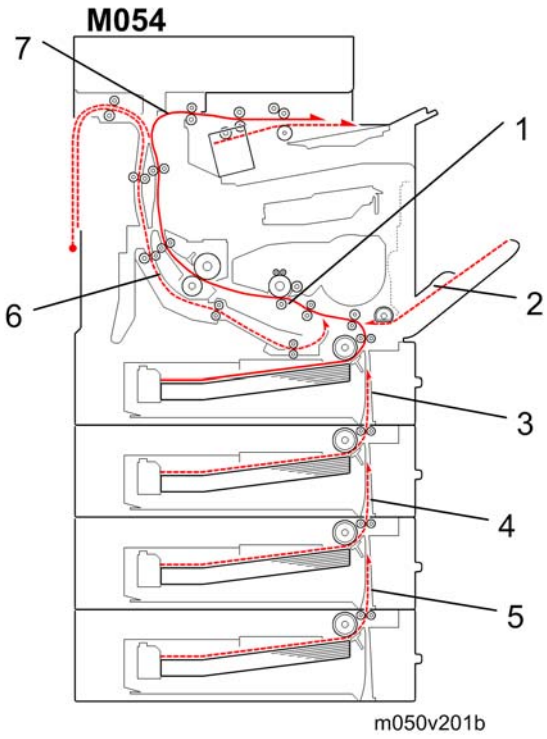
1.2.3 PAPER PATH

Standard Model (M052)/ Fax and 1 Bin Tray Unit Model (M053)



1. Paper feed from tray 1
2. Paper feed from by-pass tray
3. Paper feed from optional PFU (tray2)
4. Paper feed from optional PFU (tray3)
5. Paper feed from optional PFU (tray4)
6. Paper feed through duplex unit
7. Paper exit to 1 bin tray (M053 only)

Finisher Model (M054)

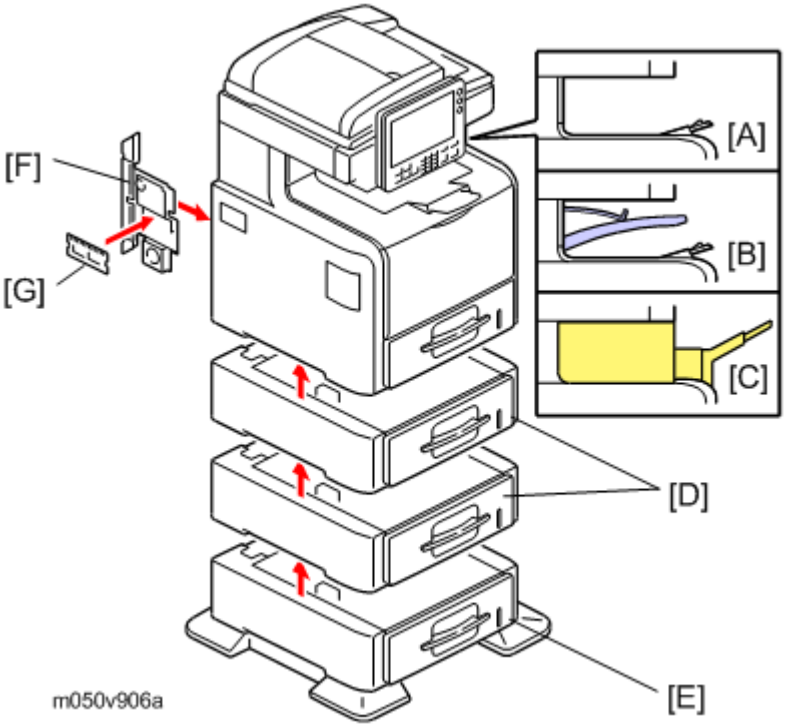


1. Paper feed from tray 1
2. Paper feed from by-pass tray
3. Paper feed from optional PFU (tray2)
4. Paper feed from optional PFU (tray3)
5. Paper feed from optional PFU (tray4)
6. Paper feed through duplex unit
7. Paper exit to internal finisher (M054 only)

1.3 MACHINE CONFIGURATION

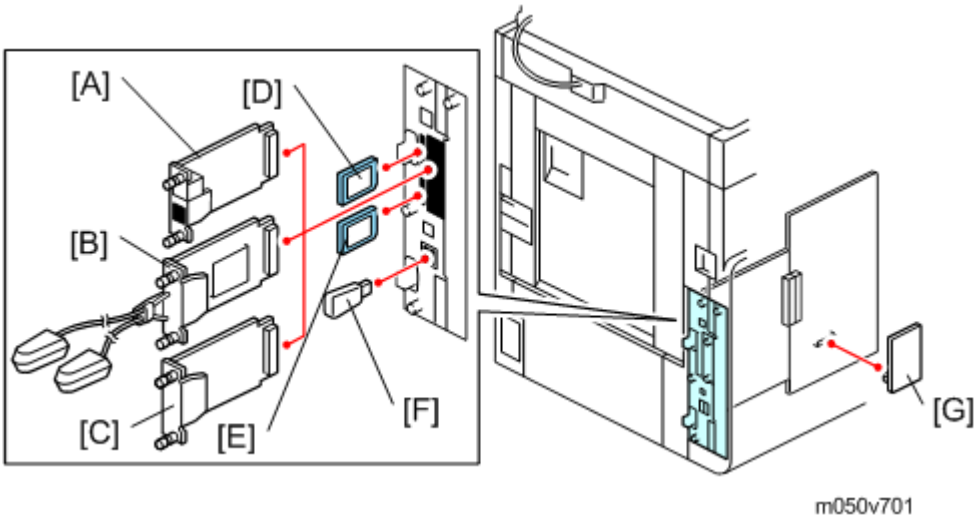
1.3.1 MACHINE CONFIGURATION

	M052	M053	M054
Fax Unit	Option	Standard	Option
1 Bin Tray Unit	Not available	Standard	Not available
Internal Finisher	Not available	Not available	Standard



Item	Machine Code	Remarks
Main Unit [A]	M052	Standard model
Main Unit [B]	M053	Fax and 1 bin tray unit model
Main Unit [C]	M054	Finisher model
Paper Feed Unit TK1090 [D]	M375	Option
Paper Feed Unit TK1100 [E]	M376	Option
Fax Option Type SP5200 [F]	M381	Standard for M053 Option for M052 and M054
Memory Unit Type B [G]	G578	SAF memory: Requires the Fax Option.

Controller Devices



Item	Machine Code	Remarks
VM Card [E]	-	Standard
Security Card [D]	-	Standard
Copy Data Security Unit Type F [G]	B829	Option
Remote Communication Gate A	D459	Option
IPDS Unit Type 5210 [D]	D571	Controller Option
Gigabit Ethernet Board Type A/ Type C [A]	Type A: G874 Type C: M397	Controller Option
IEEE802.11 a/g Interface Unit Type J, K [B]	D377	Controller Option
Browser Unit Type E [E]	D430	Controller Option
File Format Converter Type E [C]	D377	Controller Option
Bluetooth Interface Unit Type D [F]	D566	Controller Option

INSTALLATION

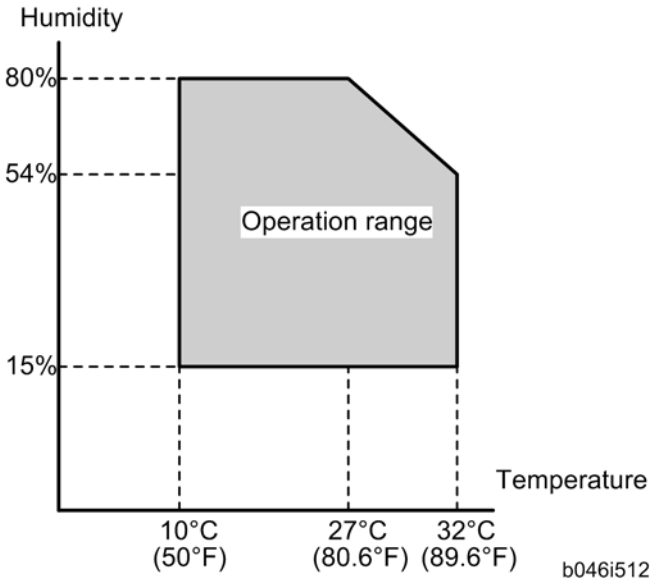
REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

2. INSTALLATION

2.1 INSTALLATION REQUIREMENTS

2.1.1 ENVIRONMENT

–Temperature and Humidity Chart–



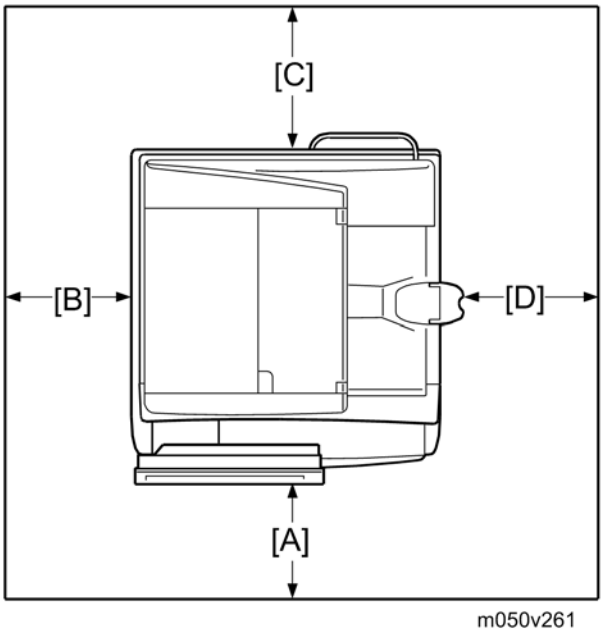
- Temperature Range: 10°C to 32°C (50°F to 89.6°F)
- Humidity Range: 15% to 80% RH
- Ambient Illumination: Less than 1,500 lux (Do not expose to direct sunlight.)
- Ventilation: Room air should turn over at least 3 times/hr/person
- Ambient Dust: Less than 0.1 mg/m^3
- Do not install the machine where it will be exposed to direct sunlight or to direct airflow (from a fan, air conditioner, air cleaner, etc.).
- Do not install the machine where it will be exposed to corrosive gas.
- Install the machine at locations lower than 2,000 m (6,560 ft.) above sea level.
- Place the machine on a firm and level base.
- Do not install the machine where it may be subjected to strong vibration.

2.1.2 MACHINE LEVEL

Front to back:	Within 5 mm (0.2") of level
Right to left:	Within 5 mm (0.2") of level

2.1.3 MINIMUM OPERATIONAL SPACE REQUIREMENTS

Place the machine near the power source, providing clearance as shown.



A: Front – 350 mm (29.6")

B: Left – 100 mm (3.9")

C: Rear – 300 mm (3.9")

D: Right – 100 mm (3.9")

2.1.4 POWER REQUIREMENTS

CAUTION

- Make sure that the wall outlet is near the machine and easily accessible. After completing installation, make sure the plug fits firmly into the outlet.
- Avoid multiple connections to the same power outlet.
- Be sure to ground the machine.

Input voltage:

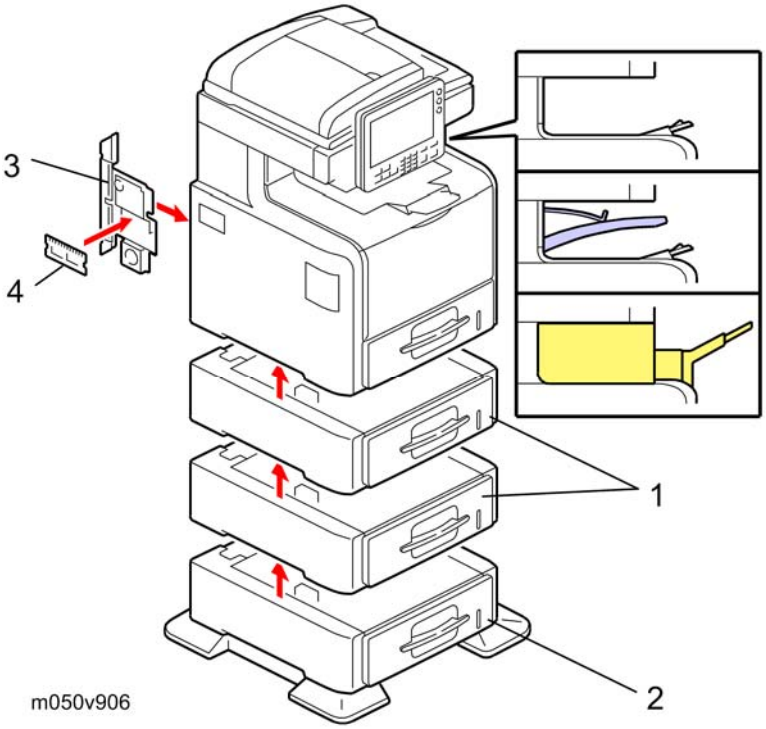
North America:	120 – 127 V, 60 Hz, 12 A
Europe/Asia:	220 – 240 V, 50/60 Hz, 8 A

Image quality guaranteed at rated voltage ± 10%.

Operation guaranteed at rated voltage ± 15%.

2.2 OPTIONAL UNIT COMBINATIONS

2.2.1 MACHINE OPTIONS

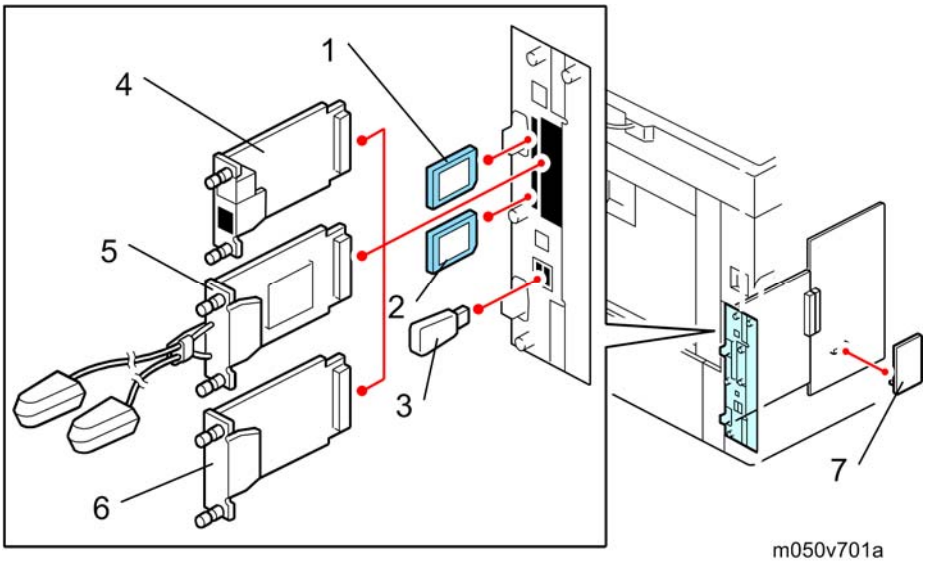


No.	Options	Remarks
1	Paper Feed Unit TK1090	Two units can be installed in the mainframe.
2	Paper Feed Unit TK1100	This unit has casters.

Fax Options

No.	Options	Remarks
3	Fax Option Type SP5200	Standard for M053 Options for M052/M054
4	Memory Unit Type B	SAF memory: Requires the fax option.

2.2.2 CONTROLLER AND OTHER OPTIONS



Controller Options

No.	Options	Remarks
1	IPDS Unit Type 5210	SD slot 1 (upper)
2	Browser Unit Type E	SD slot 2 (lower) during installation only
3	Bluetooth Interface Unit Type D	One of USB slots
4	Gigabit Ethernet Board Type A/ Type C	IF slot (one from three options)
5	IEEE802.11 a/g Interface Unit Type J, K	
6	File Format Converter Type E	

Other Options

No.	Options	Remarks
7	Copy Data Security Unit Type F	-
-	Remote Communication Gate A	-

2.3 COPIER

2.3.1 ACCESSORY CHECK

Description	Q'ty
AIO	1
Power Cord	1
VM Card	1
Extender (finisher support tray; M054 only)	1
Paper Size and Tray Decals	1
Warranty Sheet (NA only)	1
User Registration Card (NA only)	1
Help Desk Card (NA only)	1
EULA (16 languages)	1

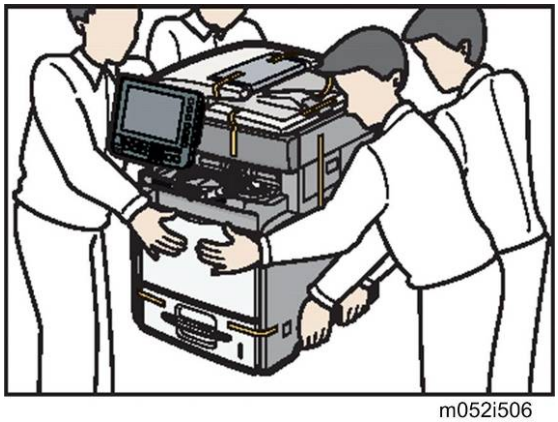
2.3.2 INSTALLATION PROCEDURE

CAUTION

- Make sure that the copier remains unplugged during installation.

Copier settings

1. Remove the plastic bag.



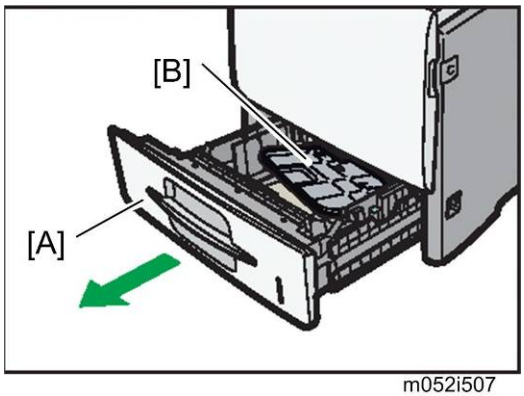
m052i506

2. Lift the machine by the inset grips on its sides.

Important

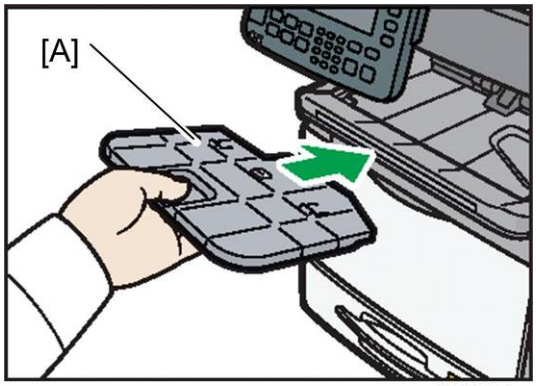
- At least four people are needed to lift the machine.

3. Lower the machine slowly and carefully to prevent trapping your hands.
4. Remove the adhesive tape attached on the machine's exterior.
5. Only for M054 model, do the following steps from 1) and 2).



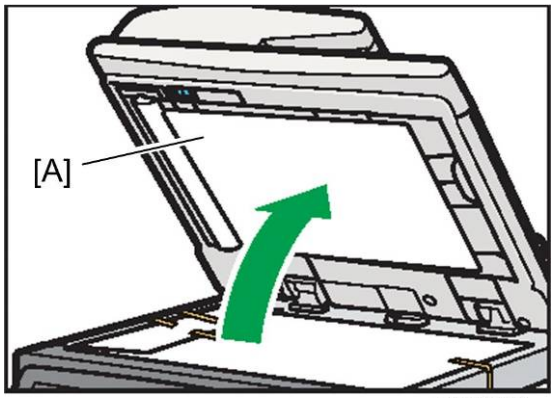
m052i507

- 1) Pull out tray 1 [A], and then remove the extender [B] for the internal finisher from tray 1.



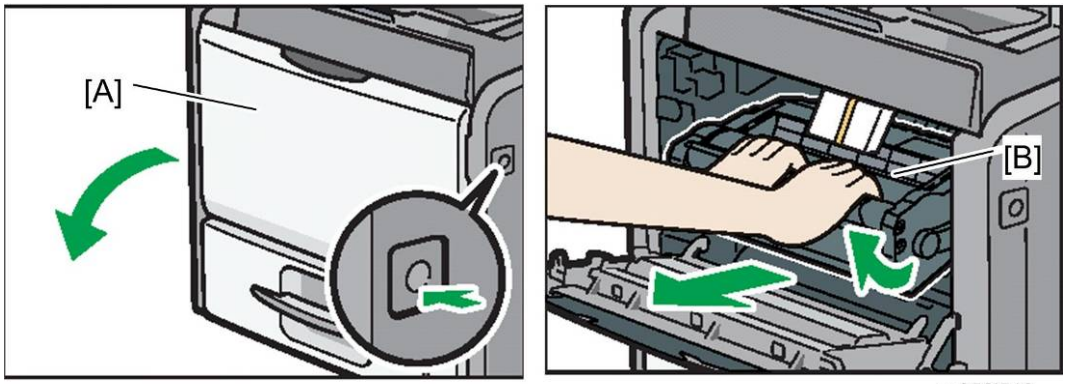
m052i508

- 2) Attach the extender [A] to the finisher tray.



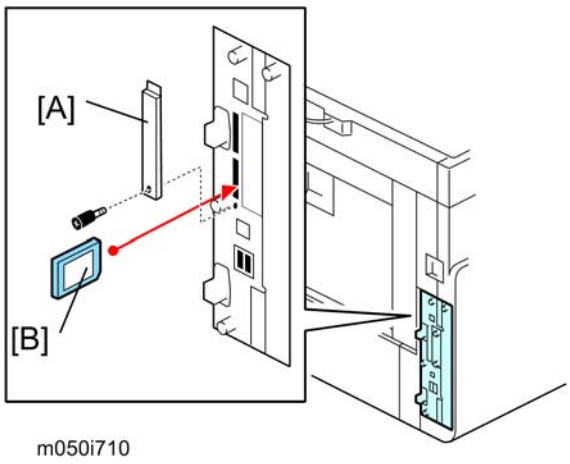
m052i509

6. Lift the ARDF [A], and then remove the protective materials attached on the exposure glass.
7. Close the ARDF.



m052i510

8. Open the front door [A] pressing the button.
9. Remove the AIO [B], and then remove the protective material attached on the machine's interior.
10. Install the AIO into the machine.
11. Close the front door.



m050i710

12. Remove the SD slot cover [A] (x 1).
13. Install the VM card [B] provided in the accessories in the SD slot 2 (lower).
14. Attach the SD slot cover [A] (x 1).
15. Plug in the machine, and then turn on the machine.
16. Start the SP mode.
17. Select SP5-302-002 and specify the time zone.
18. Select SP5-307-001, 003, and 004 and specify the daylight-saving-time settings.
19. Exit the SP mode and turn the main switch off and on.
20. Start the UP mode.
21. Specify the date and time with "Set Date" or "Set Time" (User Tool" > "System Settings" > "Set Date" or "Set Time").
22. Turn the main switch off and on.
23. Check the operations.
24. Make a full size copy, and check if the side-to-side and leading edge registrations are correct. If they are not, adjust the registrations.

Fax Settings only for M053 model

Initializing the Fax unit

When you press the Fax key for the first time after installation, the error "SRAM problem occurred / SRAM was formatted" will show on the LCD for initializing the program of the fax unit. Turn the main power switch off/on to clear the error display.

Note

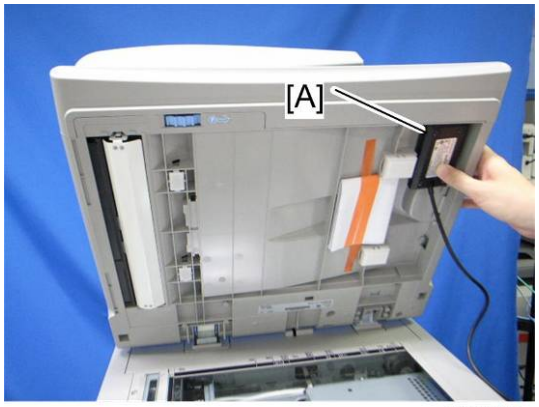
- If another error occurs after initialization, this can be a functional problem.

1. Select fax SP1-101-016 and specify the country code.
2. Select fax SP3-101-001 and specify the service station.

When Using an Smart Card Reader

If a customer wants to use a smart card reader, follow the installation procedure below. The smart card reader must be placed on the specific place. If not, some antenna or transmitter in the main machine may be interrupted.

1. ARDF rear cover (☛p.4-88)

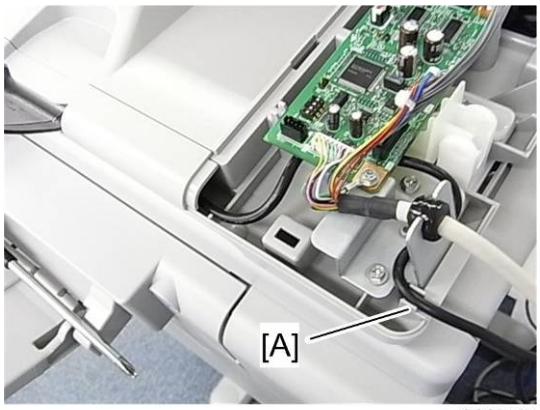


m022i136a

2. Attach the smart card reader [A].

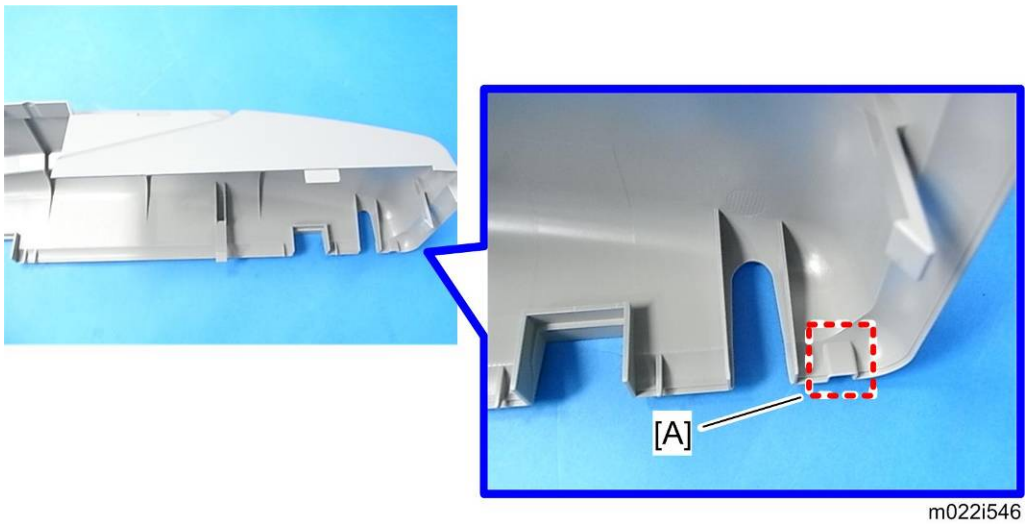
m022i544

1. Release the hook, and then put the cable outside.



m022i545

2. Route the cable [A] as shown above.



m022i546

3. Remove the part [A] of the ARDF rear cover with nippers or a similar tool.
4. Reassemble the machine.
5. For details about connecting a smart card device to the machine, refer to the installation procedure provided with the smart card device.

2.3.3 METER CLICK CHARGE

Basically, there are two ways to set up this function.

Meter click charge enabled (SP 5-930-001 set to "enabled") and Parts replacement operation type enabled (SP5-067-001 set to "0: Service"): The counter can be displayed and printed by the customer. The technician can then call the customer and ask them to read the counter.

Meter click charge disabled (SP 5-930-001 set to "disabled"; this is the default setting) and Parts replacement operation type enabled (SP5-067-001 set to "1: User", this is the default setting): The counter cannot be displayed or printed by the customer. To check the counter, the technician must print the SMC report (SP 5-990).

Note

- You must select one of the counter methods (developments/prints) in accordance with the contract by using SP5-045-001.

Item	SP No.	Function	Default
Meter Click Charge Setting	SP5-930-001	Enables or disables Meter Click Charge. **When enabled:** ▪ The counter menu shows immediately after you push the "Menu" key. The "Counter Method" (SP5-045) sets the type of the counter. ▪ You can print the counter from the counter menu. **When disabled:** ▪ The counter menu does not show.	"0": OFF
Meter Click Charge: Life Disp: Maintenance Kit	SP5-930-002	Enables or disables the PM alert for the maintenance kit. If this SP is enabled, an alert message is displayed when the maintenance kit needs to be replaced.	"1": No alert

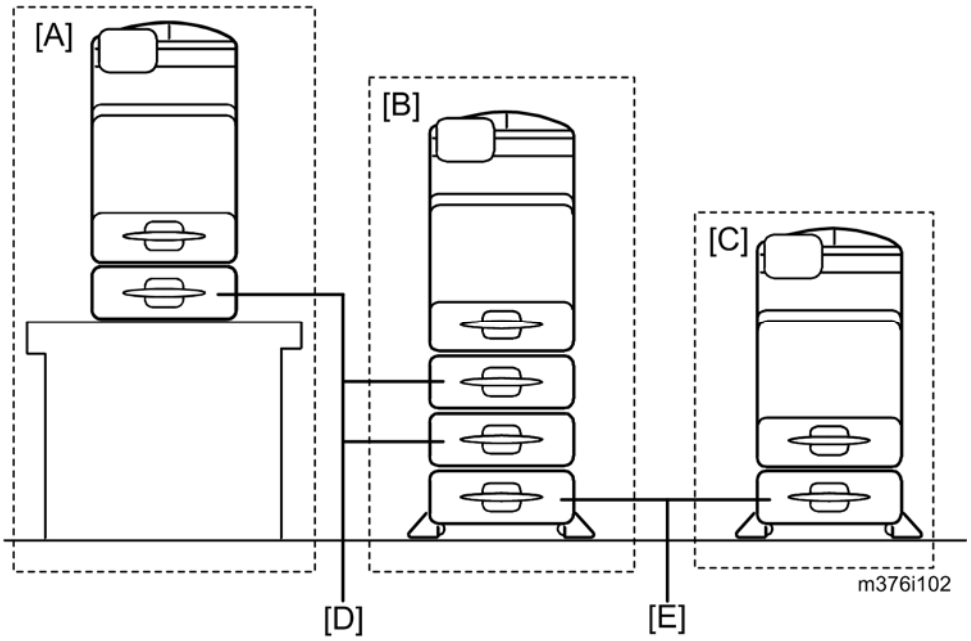
Meter Click Charge: Life Disp:AIO	SP5-930-003	Enables or disables the PM alert for the AIO. If this SP is enabled, an alert message is displayed when the AIO needs to be replaced.	"1": No alert
Counter method	SP5-045-001	Specifies if the counting method used in meter charge mode is based on develaibopments or prints.	“1”: Prints
Parts Replacement Operation Type	SP5-067-001	Selects the service maintenance or user maintenance for the maintenance kit.	"1: User "
Service Tel: Telephone /Facsimile	SP5-812-001 and -002	-001: shows or sets the telephone number of the service representative. -002: shows or sets the fax number of the service station. The number is printed on the counter list when the "Meter Click Charge" is enabled. User can send a fax message with the counter list.	-

2.4 PAPER FEED UNIT TK1090 (M375)

2.4.1 INSTALLATION PROCEDURE

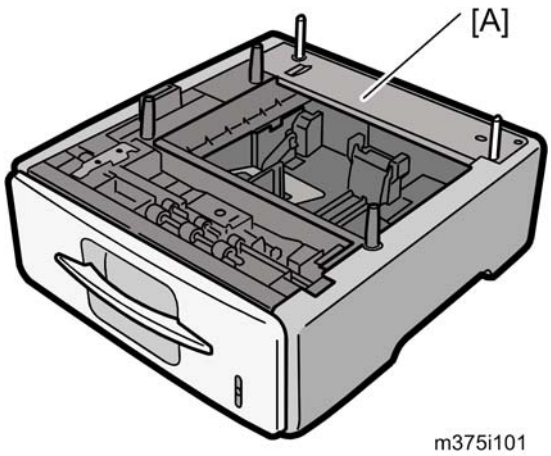
⚠CAUTION

- Unplug the main machine's power cord before starting the following procedure.

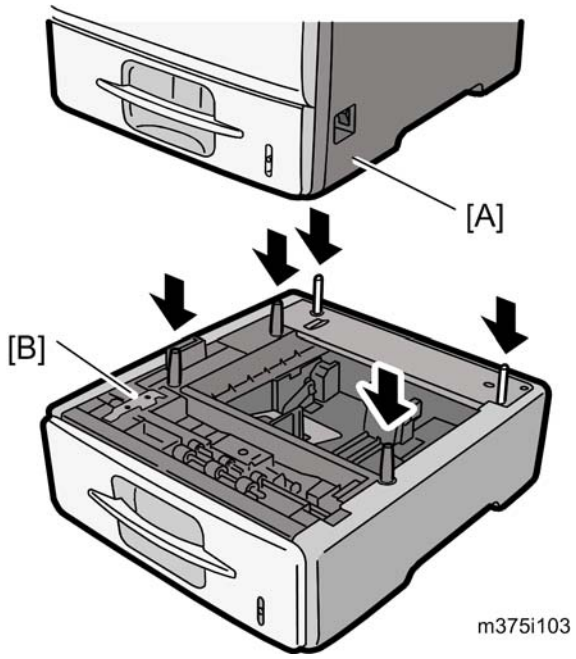


The number of optional paper feed units that can be attached depends on the location where the machine is installed.

- [A]: Only one paper feed unit (M375 [D]) can be installed on a desk.
- [B]: Up to three units (M375 [D] and M376 [E]) can be installed on the floor. Attach the optional paper feed unit with casters (M376 [E]) to the bottom of the machine to install the machine directly on the floor.
- [C]: Attach the optional paper feed unit with casters (M376 [E]) to the bottom of the machine to install the machine directly on the floor.



1. Remove all tapes and cardboard on the paper feed unit [A].
2. Pull the paper tray part way out of the paper feed unit, remove the tape and cardboard in the paper tray, and push the tray back in.



3. Set the machine [A] on the paper feed unit [B].
   - Two people are required to lift the machine.

   Note

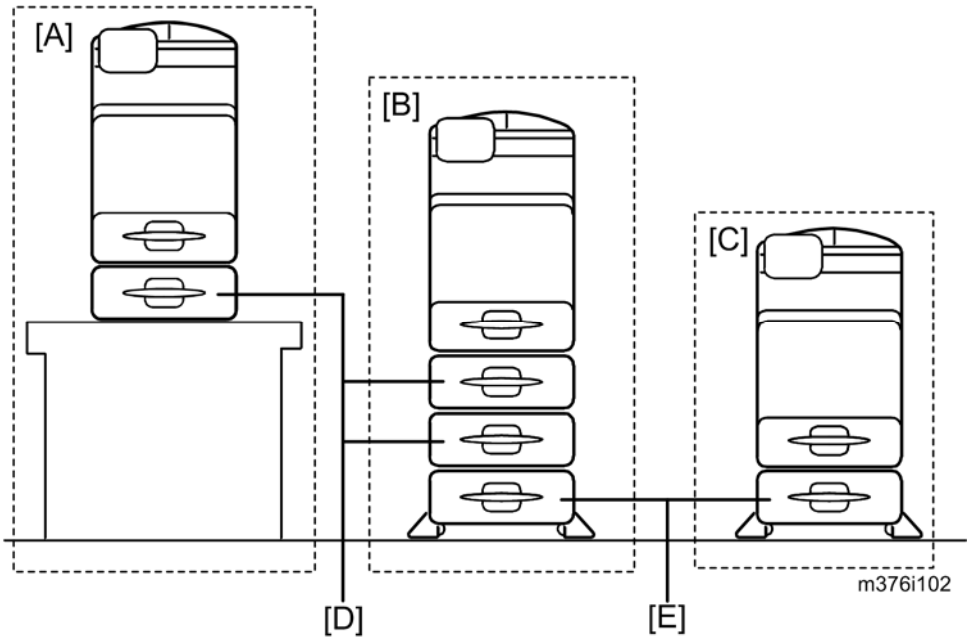
   - When installing a second paper feed unit, place on the first paper feed unit before placing the copier onto the pair of paper feed units
4. Remove the paper(s) tray from the paper tray unit(s).
5. Load paper into the paper tray(s). Adjust the side and end fences as necessary. If loading $8^1/_2$"x 14" paper, remove the end fence and set it into the special compartment.
6. Set the paper tray(s) back into the paper tray unit(s).

2.5 PAPER FEED UNIT TK1100 (M376)

2.5.1 INSTALLATION PROCEDURE

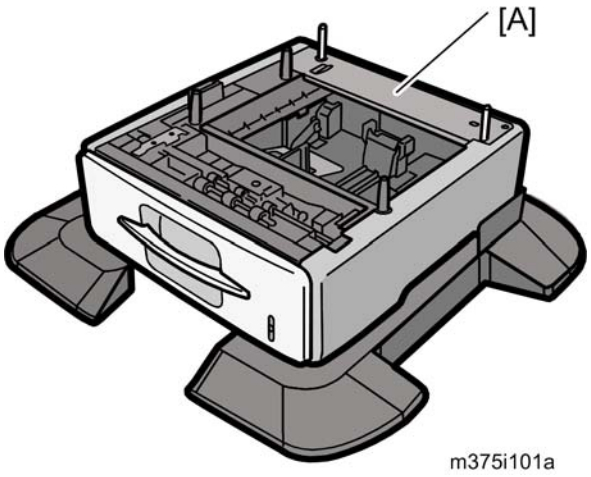
⚠CAUTION

- Unplug the main machine's power cord before starting the following procedure.

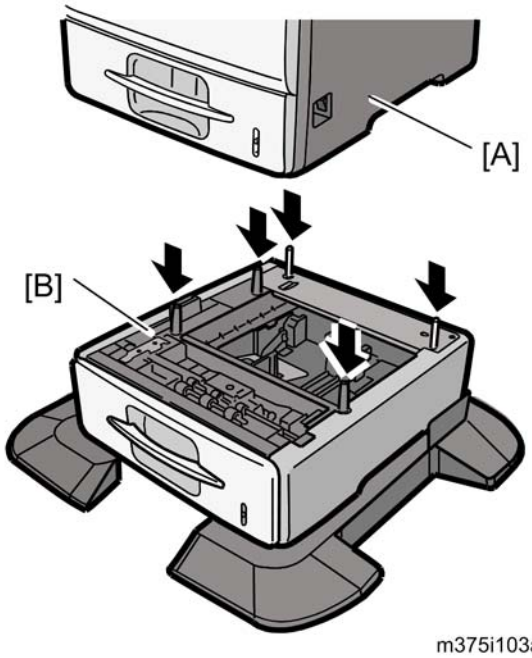


The number of optional paper feed units that can be attached depends on the location where the machine is installed.

- [A]: Only one paper feed unit (M375 [D]) can be installed on a desk.
- [B]: Up to three units (M375 [D] and M376 [E]) can be installed on the floor. Attach the optional paper feed unit with casters (M376 [E]) to the bottom of the machine to install the machine directly on the floor.
- [C]: Attach the optional paper feed unit with casters (M376 [E]) to the bottom of the machine to install the machine directly on the floor.



1. Remove all tapes and cardboard on the paper feed unit [A].
2. Pull the paper tray part way out of the paper feed unit, remove the tape and cardboard in the paper tray, and push the tray back in.

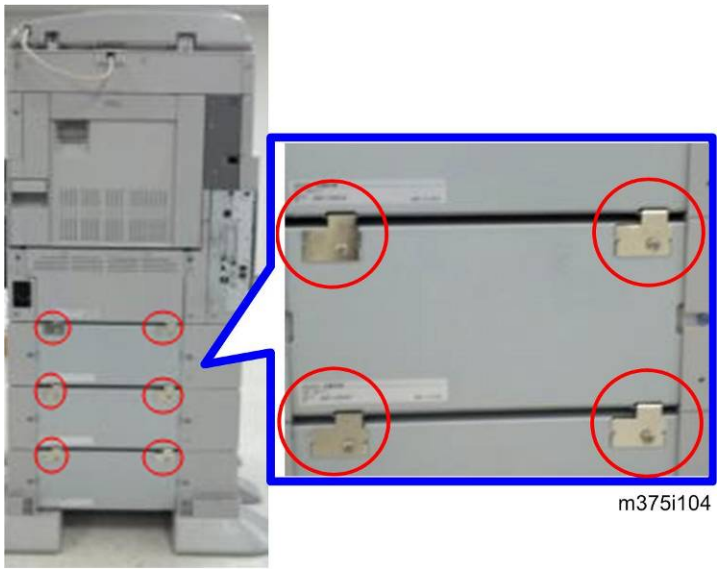


3. Set the machine [A] on the paper feed unit [B].
   - Two people are required to lift the machine.

   Note

   - When installing a second paper feed unit, place on the first paper feed unit before placing the copier onto the pair of paper feed units
4. Remove the paper(s) tray from the paper tray unit(s).
5. Load paper into the paper tray(s). Adjust the side and end fences as necessary. If loading $8^1/_2$"x 14" paper, remove the end fence and set it into the special compartment.
6. Set the paper tray(s) back into the paper tray unit(s).

When installing the three units (M375 and M376)



m375i104

1. Attach the six brackets and six screws as shown above.

m375i105

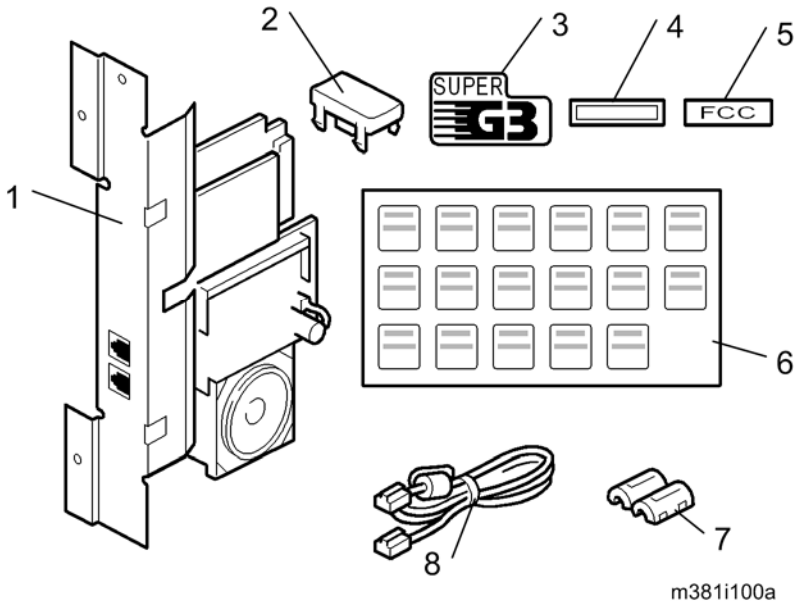
2. Attach the screws into the paper feed units as shown above.

2.6 FAX OPTION TYPE SP5200 (M381)

2.6.1 COMPONENT CHECK

Check the quantity and condition of the components against the following list.

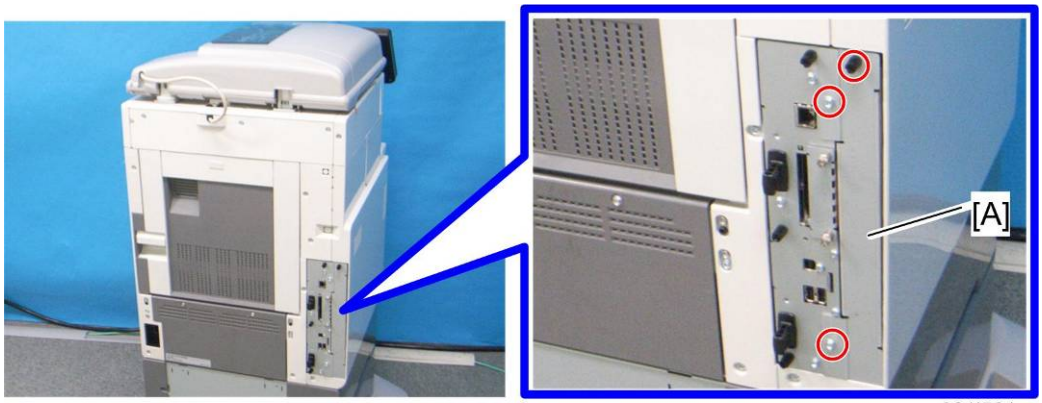
No.	Description	Q'ty
1	FCU	1
2	Fax Key top	2
3	G3 Decal	1
4	Serial Number Decal	1
5	FCC Decal (NA only)	1
6	Multi-Language Decals (EU only)	1
7	Ferrite Core	1 (Excluding NA)
8	Telephone Cord (NA only)	1
-	EMC Address Card (EU only)	1



2.6.2 INSTALLATION PROCEDURE

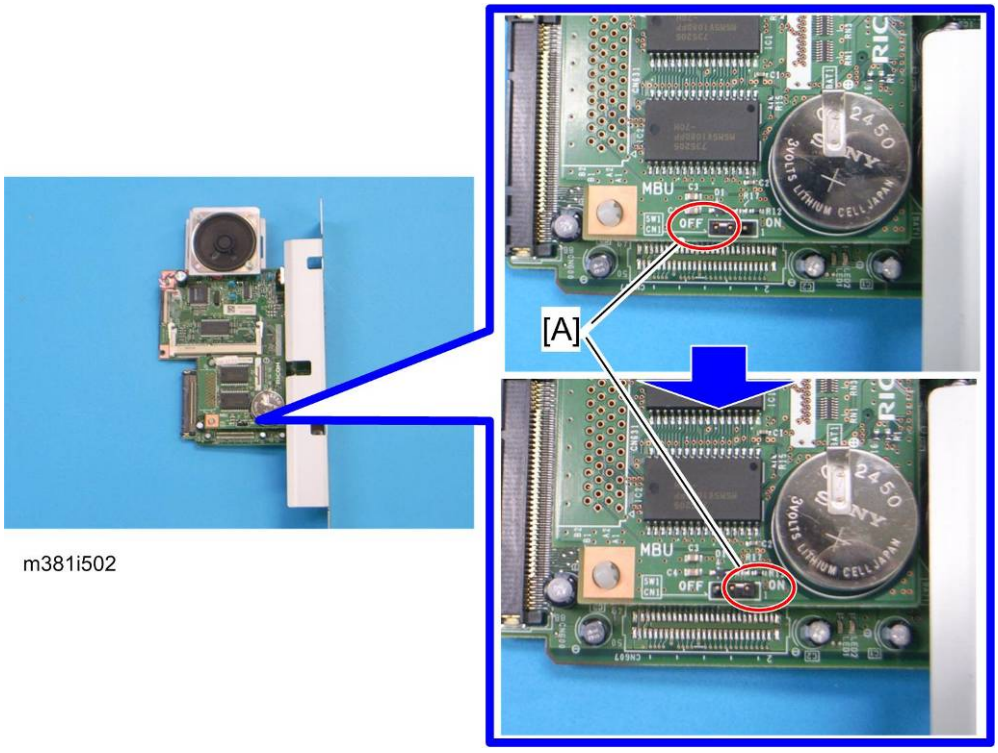
CAUTION

- Before installing this fax unit:
- Print out all data in the printer buffer.
- Turn off the main power switch and disconnect the power cord and the network cable.



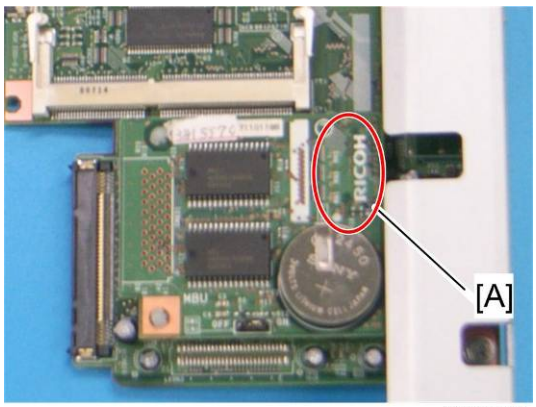
m381i501

1. Remove the FCU slot cover [A] (x 3).



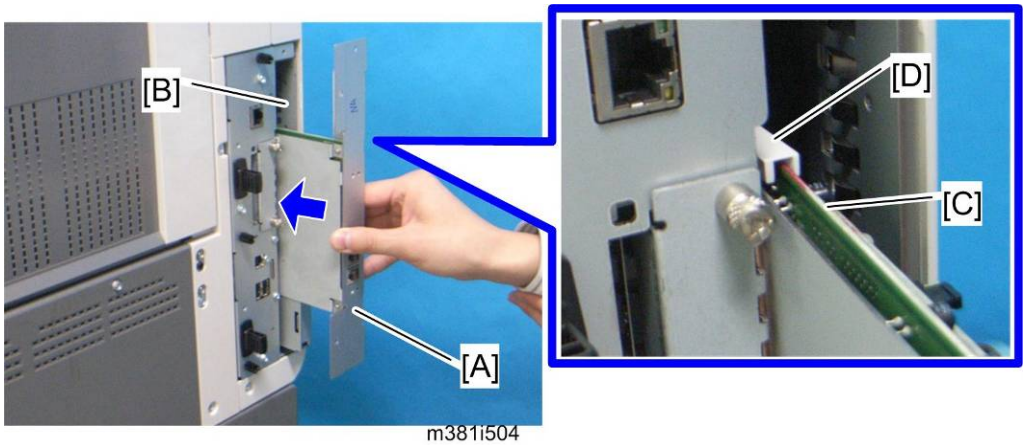
m381i502

2. Switch the MBU battery jumper switch [A] to “ON” position.



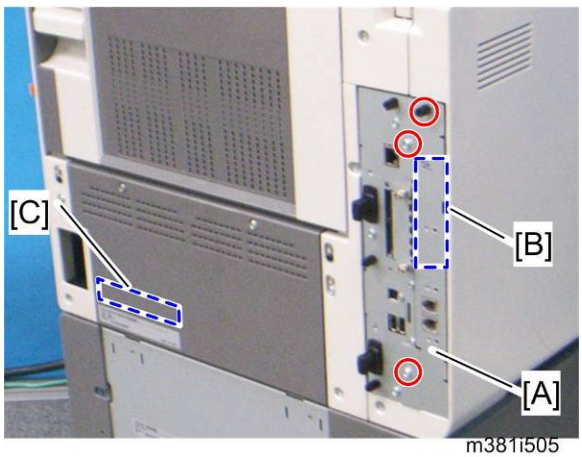
m381i503

3. Press down the place [A] on the MBU board.



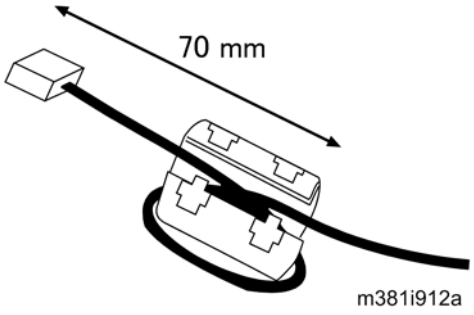
m381i504

4. Install the FCU [A] into the FCU slot [B] of the machine.
   - Align the top edge [C] of the FCU board with the rail [D] in the FCU slot when installing the FCU.

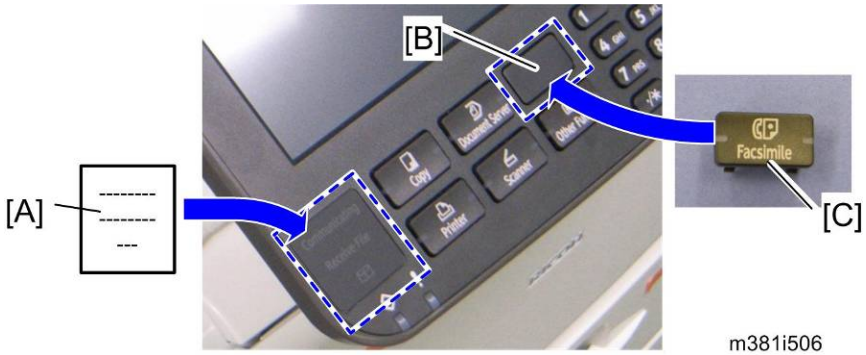


m381i505

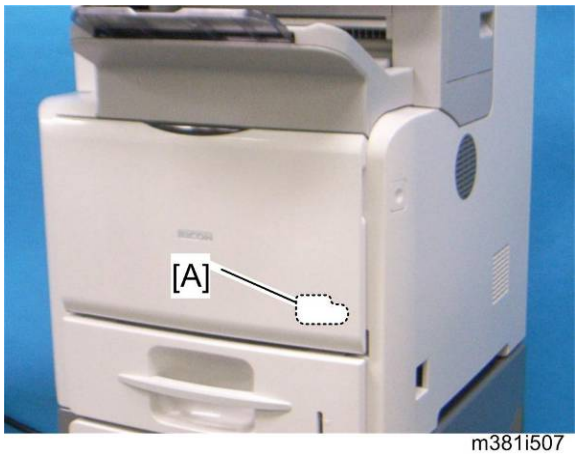
5. Secure the FCU [A] (x 3).
   - Use two screws which have already been removed in step 1.
6. Attach the serial number decal on the area [B] of the FCU bracket and FCC decal (NA only) on the area [C] above the serial number decal of the machine.
7. Connect the telephone cord to the "LINE" jack.



- For EU/AA, attach the ferrite core to the telephone cord before connecting the telephone cord to the "LINE" jack.
- For NA, use the core attached telephone cord (No.9) in the accessories of the fax unit option.



8. Attach an appropriate multi-language decal [A] (EU only).
9. Replace the blank key [B] with the fax key [C].



10. Attach the decal [A] (SUPER G3) to the front door.
11. Put the power plug into the outlet and turn on the main power of the machine.

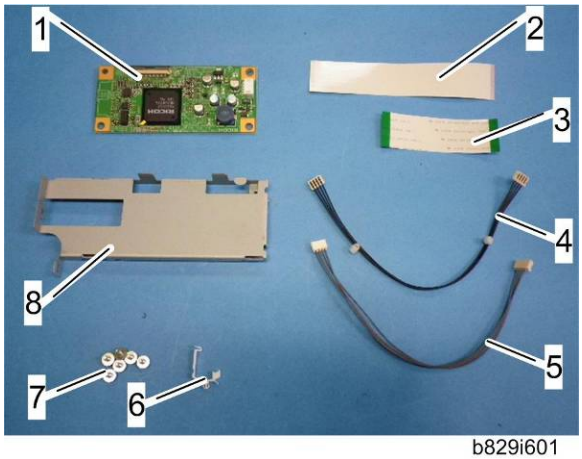
Note

- Make sure that the outlet is grounded.
- "SRAM formatted" shows on the operation panel after you have turned the main switch on. Turn the main switch off and on again for normal use.

12. Enter the "User Tools" mode and set date and time.
13. Do SP1000-001 in the fax SP mode and enter the serial number for the fax unit.
14. Enter the correct country code with SP1401-001 (NCU Country/ Area Code Setting).
15. Exit the SP mode, and turn the machine off and on.

2.7 COPY DATA SECURITY UNIT TYPE F (B829)

2.7.1 COMPONENTS CHECK



No.	Description	Q'ty
1	ICIB-3	1
2	Flexible cable: Long (Not used)	1
3	Flexible cable: Short (Not used)	1
4	Harness with bands (Not used)	1
5	Harness (Not used)	1
6	Saddle Clamp (Not used)	1
7	Screws: M3x6	6
8	Bracket (Not used)	1

2.7.2 INSTALLATION

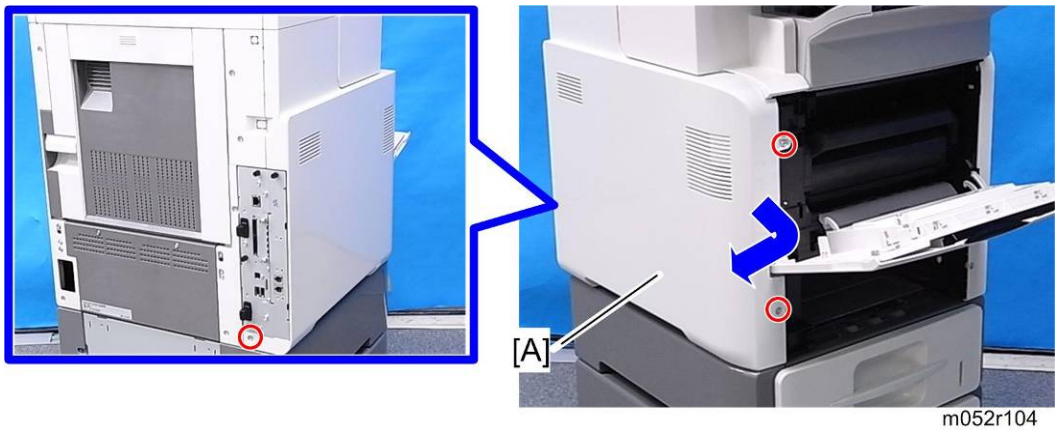
CAUTION

- Unplug the main machine power cord before you do the following procedure.

1. Open the front door.

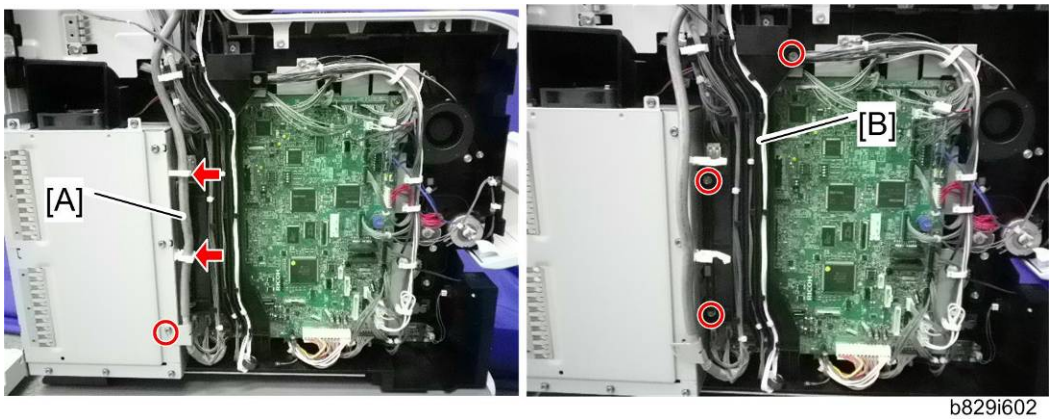
m052r103

2. Pull out the tray 1 [A].



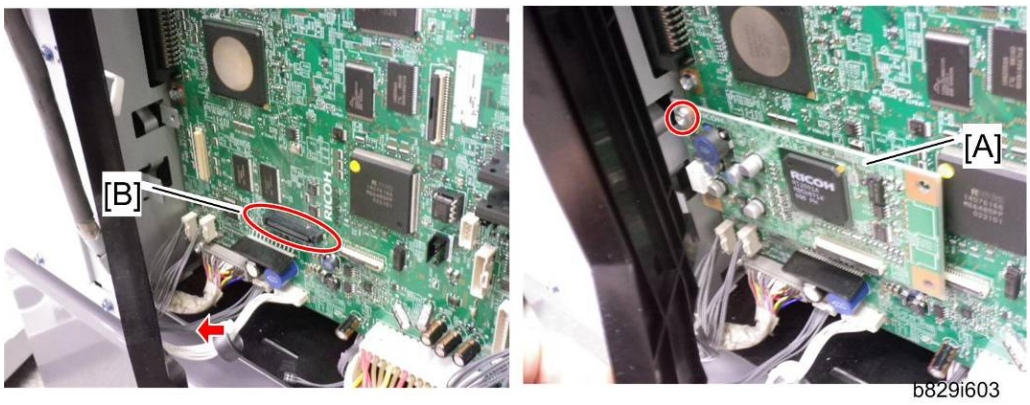
m052r104

3. Remove the left cover [A] of the machine (x 3).



b829i602

4. Move the scanner I/F cable aside [A] (x 1, x 2).
5. Move the harness guide [B] aside (x 3).



6. Attach ICIB-3 [A] to CN107 [B] on the BICU (x 1).
7. Reassemble the machine.

User Tool Setting

1. Plug in the machine and turn on the main power switch.
2. Go into the User Tools mode, and select System Settings > Administrator Tools > Copy Data Security Option > “On”.
3. Exit User Tools.
4. Check the operation.

Note

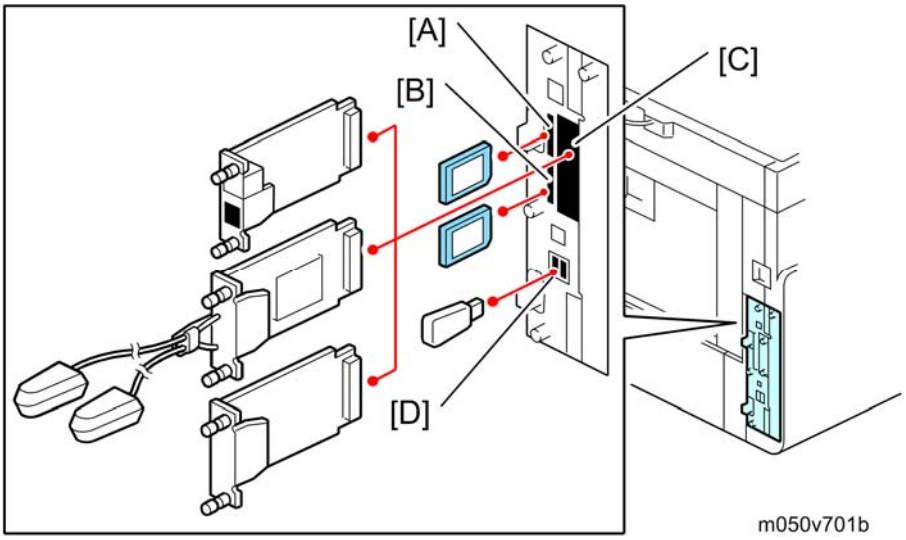
- The machine will issue an SC165 error if the machine is powered on with the ICIB-3 removed and the “Data Security for Copying“ feature set to “ON”.
- The machine will issue an uncertain SC165 error if ICIB-3 is defective when the machine is powered on and the “Data Security for Copying“ feature is set to “OFF”.
- When you remove this option from the machine, first set this feature to “OFF” with the user tool before removing this board. If you forget to do this, “Data Security for Copying “feature cannot appear in the user tool setting. Also, SC165 will appear every time the machine is switched on, and the machine cannot be used.

5. Make sure that the machine can recognize the option.

2.8 CONTROLLER OPTIONS

2.8.1 OVERVIEW

This machine has I/F card slots for optional I/F connections and SD card slot applications. After you install an option, check that the machine can recognize it (see “Check All Connections” at the end of this section).



SD Card Slots

- Slot 1 (upper slot) [A] is used for Security Card (standard) or IPDS Unit.
  If IPDS Unit is to be installed, first merge IPDS application into the Security Card with SP mode.
- Slot 2 (lower slot) [B] is used for VM card (standard) or service only (for example, updating the firmware).

I/F Card Slot

- The I/F card slot [C] is used for one of the optional I/F connections (only one can be installed): Gigabit Ethernet, IEEE802.11a/g (Wireless LAN), or File Format Converter.

USB Slots

- Both USB slots [D] are used for the Bluetooth option and a card authentication device.

2.8.2 SD CARD APPLI MOVE

Important

- The PostScript3 application and fonts cannot be moved to another SD card. However, other applications can be moved onto the PostScript3 SD card.

Overview

The service program “SD Card Appli Move” (SP5-873) lets you copy application programs from one SD card to another SD card.

SD slot 1 (upper) is used to store application programs. But there are two possible applications (Security Card (Data Overwrite Security and HDD Encryption Unit), IPDS). You cannot run application programs from Slot 2. However you can move application programs from SD slot 2 (lower slot) to SD slot 1 (upper slot) with the following procedure.

Make sure that the target SD card has enough space.

1. Enter SP5873 “SD Card Appli Move”.
2. Then move the application from the SD Card in SD slot 2 (lower slot) to the SD Card in SD slot 1 (upper slot).

   Note

   - Do steps 1-2 again if you want to move another application program.
3. Exit the SP mode.

Be very careful when you do the SD Card Appli Move procedure:

- The data necessary for authentication is transferred with the application program from an SD card to another SD card. Authentication fails if you try to use the SD card after you copy the application program from one card to another card.
- Do not use the SD card if it has been used before for other purposes. Normal operation is not guaranteed when such an SD card is used.
- Keep the SD card in a safe place after you copy the application program from one card to another card. This is done for the following reasons:

  1) The SD card can be the only proof that the user is licensed to use the application program.

  2) You may need to check the SD card and its data to solve a problem in the future.

Move Exec

The menu “Move Exec” (SP5-873-001) lets you copy application programs from the original SD card to another SD card.

Important

- Do not turn ON the write protect switch of the system SD card or application SD card on the machine. If the write protect switch is ON, a download error (e.g. Error Code 44) occurs during a firmware upgrade or application merge.

1. Turn the main switch off.
2. Make sure that an SD card is in SD slot 1 (upper slot). The application program is copied to this SD card.
3. Insert the SD card with the application program in SD slot 2 (lower slot). The application program is copied from this SD card.
4. Turn the main switch on.
5. Start the SP mode.
6. Select SP5-873-001 "Move Exec".
7. Follow the messages shown on the operation panel.
8. Turn the main switch off.
9. Remove the SD card from SD slot 2 (lower slot).
10. Turn the main switch on.
11. Check that the application programs run normally.

Undo Exec

"Undo Exec" (SP5-873-002) lets you copy back application programs from an SD card to the original SD card. You can use this program when, for example, you have mistakenly copied some programs by using Move Exec (SP5-873-001).

Important

- Do not turn ON the write protect switch of the system SD card or application SD card on the machine. If the write protect switch is ON, a download error (e.g. Error Code 44) occurs during a firmware upgrade or application merge.

1. Turn the main switch off.
2. Insert the original SD card in SD slot 2 (lower slot). The application program is copied back into this card.
3. Insert the SD card with the application program in SD slot 1 (upper slot). The application program is copied back from this SD card.
4. Turn the main switch on.
5. Start the SP mode.
6. Select SP5-873-002 "Undo Exec."
7. Follow the messages shown on the operation panel.
8. Turn the main switch off.
9. Remove the SD card from SD slot 2 (lower slot).

   Note

   - This step assumes that the application programs in the SD card are used by the machine.
10. Turn the main switch on.
11. Check that the application programs run normally.
12. Make sure that the machine can recognize the option (see 'Check All Connections' at the end of this section).

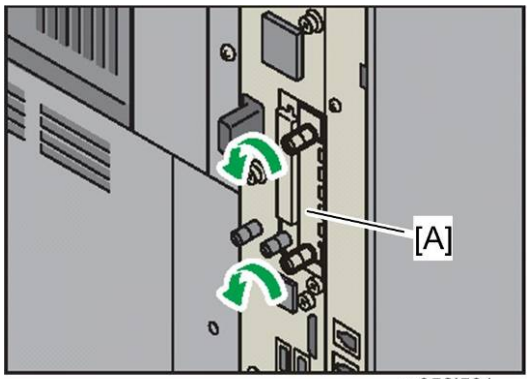
2.8.3 FILE FORMAT CONVERTER (D377)

Installation Procedure

⚠CAUTION

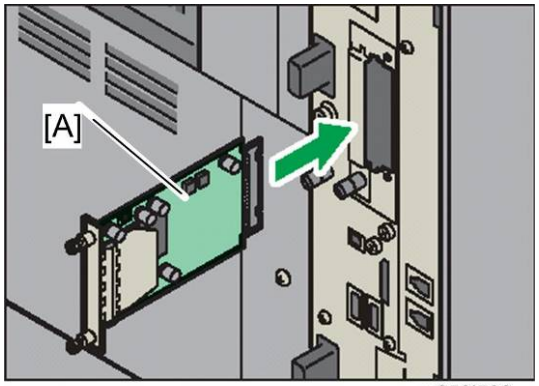
- Unplug the main machine power cord before you do the following procedure.

You can only install one of the following network interfaces or printer enhanced option at one time: (IEEE 802.11 a/g, g (Wireless LAN), Gigabit Ethernet, or File Format Converter).



m052i501

1. Remove the I/F-slot cover [A] (x 2).



m052i502

2. Install the file format converter [A] into the I/F-slot and then fasten it with screws.
3. Plug in and turn on the main power switch.
4. Check or set the following SP codes with the values shown below.

SP No.	Title	Setting
SP5-836-001	Capture Function (0:Off 1:On)	"1"
SP5-836-002	Panel Setting	"0"

5. Check the operation.
6. Make sure that the machine can recognize the option (see 'Check All Connections' at the end of this section).

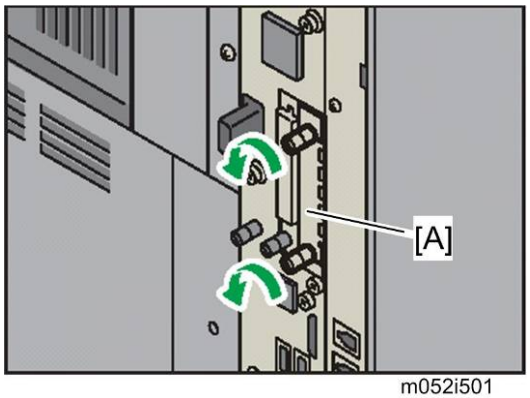
2.8.4 IEEE 802.11 A/G, G (D377: WIRELESS LAN)

Installation Procedure

⚠CAUTION

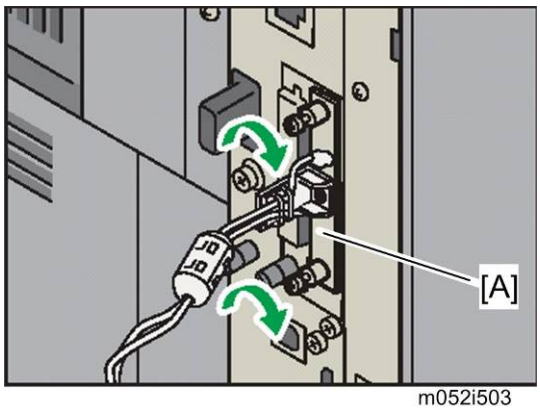
- Unplug the main machine power cord before you do the following procedure.

You can only install one of the following network interfaces or printer enhanced option at one time: (IEEE 802.11 a/g, g (Wireless LAN), Gigabit Ethernet, or File Format Converter).



m052i501

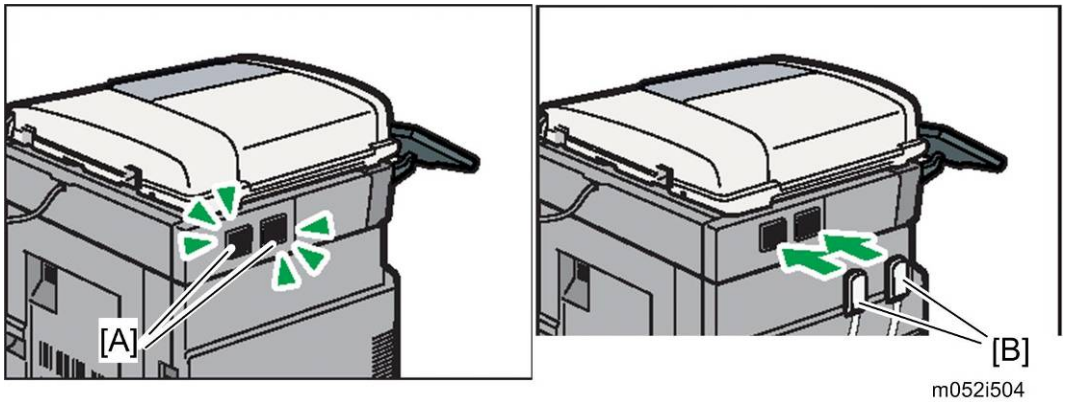
1. Remove the I/F-slot cover [A] from the I/F-slot (x 2).



m052i503

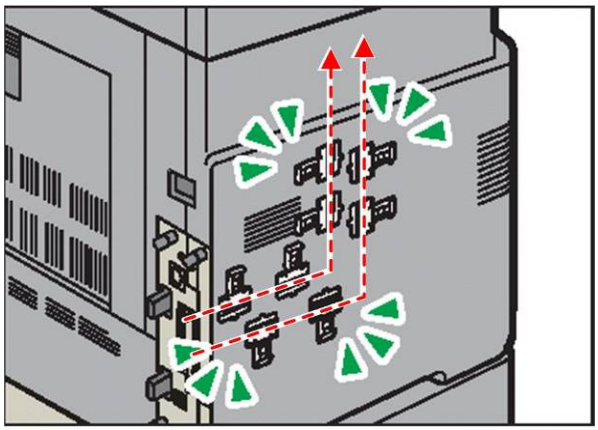
2. Install the wireless LAN board [A] (Knob-screw x 2) into the I/F-slot.
3. Make sure that the machine can recognize the option (see 'Check All Connections' at the

end of this section).



m052i504

4. Peel off the cover from the double-sided tape on the Velcro fasteners [A], and then attach the fasteners [A] at the scanner left cover of the machine.
5. Attach the antennas [B] to the fasteners on the scanner left cover.


m052i505

6. Attach eight clamps as shown above.
7. Wire the cables and clamp them (x 8).

Note

- Make sure that the cables are not slack. Keep them wired tightly along the covers.

You may have to move the machine if the reception is not clear.

- Make sure that the machine is not located near an appliance or any type of equipment that generates strong magnetic fields.
- Put the machine as close as possible to the access point.

UP Mode Settings for Wireless LAN

Enter the UP mode. Then do the procedure below to perform the initial interface settings for IEEE 802.11 a/g, g. These settings take effect every time the machine is powered on.

Note

- You cannot use the wireless LAN if you use Ethernet.

1. Press the “User Tools/Counter” key.
2. On the touch panel, press “System Settings”.

Note

- The Network I/F (default: Ethernet) must be set for either Ethernet or wireless LAN.

3. Select “Interface Settings”.
4. Press “Wireless LAN”. Only the wireless LAN options show.
5. Communication Mode. Select either “802.11 Ad hoc” or “Infrastructure”.
6. SSID Setting. Enter the SSID setting. (The setting is case sensitive.)
7. Channel. You need this setting when Ad Hoc Mode is selected.

Region A (mainly Europe and Asia)

- Range: 1-13, 36, 40, 44 and 48 channels (default: 11)

In some countries, only the following channels are available:

- Range: 1-11 channels (default: 11)

Region B (mainly North America)

- Range: 1-11, 36, 40, 44 and 48 channels (default: 11)

Note

- The allowed range for the channel settings may vary for different countries.

8. WEP (Encryption) Setting. The WEP (Wired Equivalent Privacy) setting is designed to protect wireless data transmission. The same WEP key is required on the receiving side in order to unlock encoded data. There are 64 bit and 128 bit WEP keys.

   WEP:

   Selects “Active” or “Inactive” (“Inactive” is default.).

   Range of Allowed Settings:

   64 bit: 10 characters

   128 bit: 26 characters

9. Press “Return to Default” to initialize the wireless LAN settings.

   Press “Yes” to initialize the following settings:

   - Transmission mode
   - Channel
   - Transmission Speed
   - WEP
   - SSID
   - WEP Key

SP Mode and UP Mode Settings for IEEE 802.11 a/g, g Wireless LAN

The following SP commands and UP modes can be set for IEEE 802.11 a/g, g.

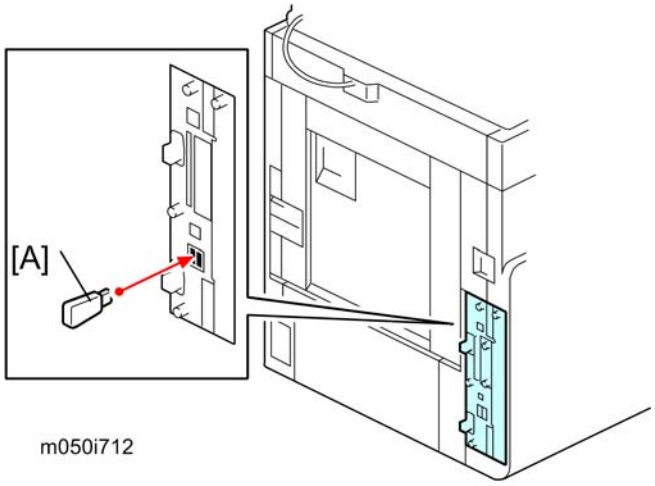
SP No.	Name	Function
5840-006	Channel MAX	Sets the maximum range of the channel settings for the country.
5840-007	Channel MIN	Sets the minimum range of the channels settings allowed for your country.
5840-008	Transmission Speed	Sets the transmission speed to one of the following: Auto, 54 Mbps, 48 Mbps, 36 Mbps, 24 Mbps, 18 Mbps, 12 Mbps, 9 Mbps, 6 Mbps, 11 Mbps, 5.5 Mbps, 2 Mbps, 1 Mbps (default: Auto)
5840-011	WEP Key Select	Used to select the WEP key (Default: 00).
UP mode	Name	Function
	SSID	Used to confirm the current SSID setting.
	WEP Key	Used to confirm the current WEP key setting.
	WEP Mode	Used to show the maximum length of the string that can be used for the WEP Key entry.

2.8.5 BLUETOOTH INTERFACE UNIT TYPE D (D566)

Installation Procedure

CAUTION

- Unplug the main machine power cord before you do the following procedure.



1. Install the Bluetooth [A] into the one of USB slots.
2. Make sure that the machine can recognize the option (see ‘Check All Connections’ at the end of this section).

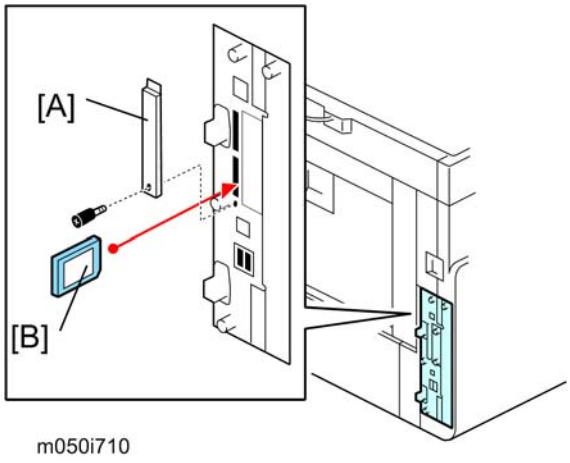
2.8.6 BROWSER UNIT TYPE E (D430)

Installation Procedure

Important

- Unplug the main machine power cord before you do the following procedure.

Do not leave the SD card in the SD slot 2 after installing this application.



1. Remove the SD slot cover [A] for SD slots (x 1).
2. Turn the SD-card label face [B] to the right (rear view), then push it slowly into SD slot 2 until you hear a click.
3. Plug in the machine and turn on the main power switch.
4. Push the "User Tools" key.
   - If an administrator setting is registered for the machine, step 5 and 6 are required. Otherwise, skip to step 7
5. Push the "Login/ Logout" key.
6. Login with the administrator user name and password.
7. Touch "Extended Feature Settings" twice on the LCD.
8. Touch "Install" on the LCD.
9. Touch "SD Card".
10. Touch the "Browser" line.
11. Under "Install to" touch "Machine HDD" and touch "Next".
12. When you see "Ready to Install", check the information on the screen to confirm your previous selection.
13. Touch "OK". You will see "Installing the extended feature... Please wait.", and then "Completed".
14. Touch "Exit" to go back to the setting screen.
15. Touch "Change Allocation".
16. Touch the "Browser" line.

17. Press the hard key that you want to use for the Browser Unit. As a default, this function is assigned to the "Other Functions" key (the bottom key of the function keys).
18. Touch "OK".
19. Touch "Exit" twice to go back to the copy screen.
20. Turn off the main power switch.
21. Install the key top for "Browser Unit" to the key slot on the operation panel where you want.
22. Remove the SD card from the SD slot 2.
23. Attach the slot cover [A] (x 1).
24. Keep the SD card in a safe place after you install the application program from the card to HDD. This is because that the SD card can be the only proof that the user is licensed to use the application program. You may need to check the SD card and its data to solve a problem in the future.
25. Turn off and on the machine.

Update Procedure

1. Remove the SD slot cover for SD slots (x 1).
2. Turn the SD-card label face to the right (rear view), then push it slowly into the SD slot 2 until you hear a click.
3. Plug in and turn on the main power switch.
4. Push the "User Tools" key.
   - If an administrator setting is registered for the machine, step 5 and 6 are required. Otherwise, skip to step 7
5. Push the "Login/ Logout" key.
6. Login with the administrator user name and password.
7. Touch "Extended Feature Settings" twice on the LCD.
8. Touch "Uninstall" on the LCD.
9. Touch the "Browser" line
10. Confirmation message appears on the LCD.
11. Touch "Yes" to proceed.
12. Reconfirmation message appears on the LCD.
13. Touch "Yes" to uninstall the browser unit.
14. You will see "Uninstalling the extended feature... Please wait.", and then "Completed".
15. Touch "Exit" to go back to the setting screen.
16. Exit "User/Tools" setting, and then turn off the main power switch.
17. Remove the SD card from SD slot 2.
18. Overwrite the updated program in the "sdk" folder of the browser unit application with PC.
19. Do the "Installation Procedure" to install the browser unit.

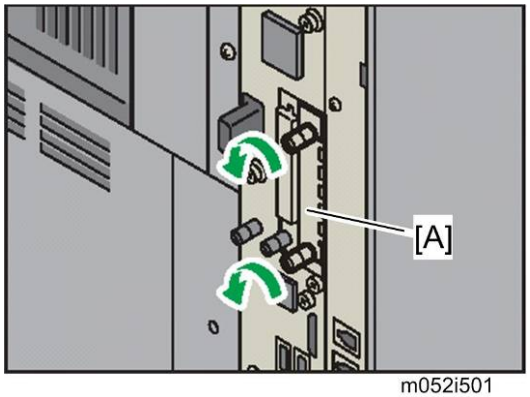
2.8.7 GIGABIT ETHERNET BOARD TYPE A (G874)/ TYPE C (M397)

Installation Procedure

CAUTION

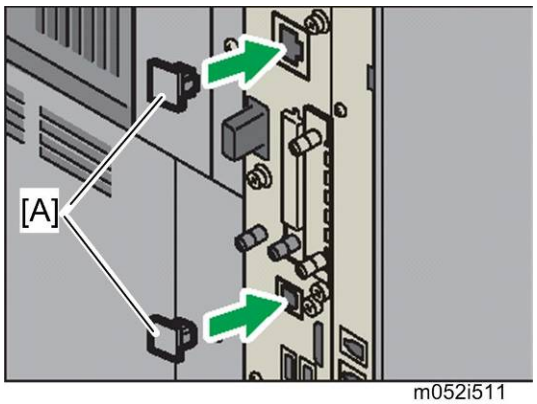
- Unplug the main machine power cord before you do the following procedure.

You can only install one of the following network interfaces or printer enhanced option at one time: (IEEE 802.11 a/g, g (Wireless LAN), Gigabit Ethernet, or File Format Converter).



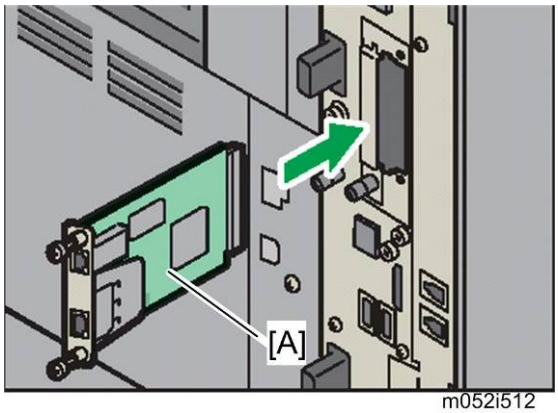
m052i501

1. Remove the I/F-slot cover [A] from the I/F-slot (x 2).



m052i511

2. Attach the two caps [A] to the Ethernet (10/100 Base-T) port and the USB port as shown above.



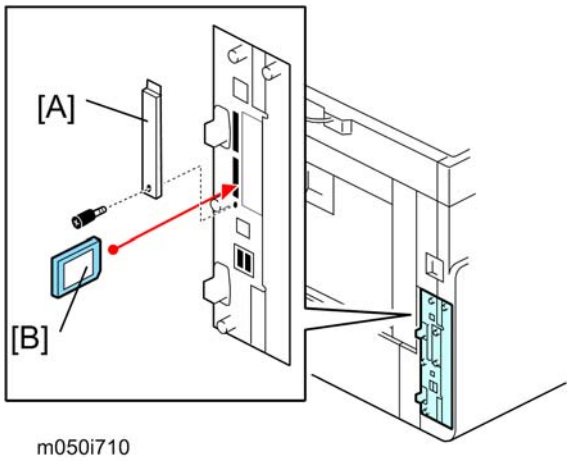
m052i512

3. Install the Gigabit Ethernet board [A] (Knob-screw x 2) into the I/F-slot.

4. Attach the ferrite core to the LAN cable, and connect the LAN cable to the machine.
5. Connect the USB cable to the USB connector.
6. Make sure that the machine can recognize this option (see 'Check All Connections' at the end of this section).

2.8.8 IPDS UNIT TYPE 5210 (D571)

Installation Procedure



1. Remove the SD slot cover [A] (x 1).
2. Install the IPDS card [B] in SD slot 2 (lower slot).
3. Plug in the machine, and then turn on the machine.
4. Enter the SP mode, and then select SP5-873-001 "Move Exec".
5. Follow the messages shown on the operation panel.
6. Turn the main switch off.
7. Remove the IPDS card from SD slot 2 (lower slot).
   - Keep the IPDS card in a safe place after you copy the application program from one card to another card.
8. Turn the main switch on.
9. Check that the application programs run normally.
10. Attach the SD slot cover [A] (x 1).

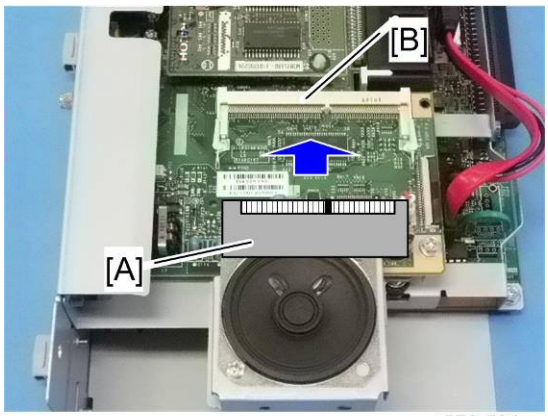
2.8.9 MEMORY UNIT TYPE B 32MB (G578)

Installation Procedure

CAUTION

- Unplug the main machine power cord before you do the following procedure.

1. Fax unit (☛p.4-71 "Controller Unit")



g578t501

2. Push the memory unit [A] (32 MB) in the memory slot [B] until both lock levers lock the memory unit.
3. Reassemble the machine.

2.8.10 CHECK ALL CONNECTIONS

1. Plug in the power cord. Then turn on the main switch.
2. Enter the printer user mode. Then print the configuration page.
   User Tools > Printer Settings > List Test Print > Config. Page

All installed options are shown in the “System Reference” column.

PREVENTIVE MAINTENANCE

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

3. PREVENTIVE MAINTENANCE

3.1 MAINTENANCE TABLES

3.1.1 USER MAINTENANCE

The customer can replace all PM items with the Maintenance Kit.
The user can maintain this machine. For more see "Printer Engine Service Mode".
The operation panel shows “Replace Maintenance Kit” when the PM counter reaches 120 k.
After the user replaces the fusing unit in the maintenance kit, the machine automatically resets the PM counter.

Item	Quantity	Remarks
Fusing unit	1	-
Transfer roller	1	-
Paper feed roller	5	For standard and optional tray(s)
Friction pad	5	For standard and optional tray(s)

3.1.2 SERVICE MAINTENANCE

See "Appendices" for the following information:

- Preventive Maintenance Items
- Other Yield Parts

3.2 PM PARTS SETTINGS

3.2.1 BEFORE REMOVING THE OLD PM PARTS

1. Enter the SP mode.
2. Output the SMC logging data with SP5-990-004.
3. Clear the PM counters with SP7-804.
4. Exit the SP mode.

Item	SP
All Units	7-804-002
Fusing Unit	7-804-003
Transfer Roller	7-804-004
Paper Feed Roller	7-804-005

For the fusing unit, there is a new unit detection mechanism. It is not necessary to reset PM counter.

3.2.2 AFTER INSTALLING THE NEW PM PARTS

1. Turn on the main power switch.
2. Output the SMC logging data with SP5-990-004 and check the counter values.
3. Make sure that the PM counters for the replaced units are “0” with SP7-803. If the PM counter for a unit was not reset, then reset that counter with SP 7-804.

3.2.3 OPERATION CHECK

Check if the sample image has been copied normally.

REPLACEMENT AND ADJUSTMENT

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

4. REPLACEMENT AND ADJUSTMENT

4.1 PRECAUTIONS

4.1.1 GENERAL

⚠CAUTION

- Turn off the main power switch and unplug the machine before starting replacement.

Before turning off the main power switch, check that no mechanical component is operating. Mechanical components may stop out of their home positions if you turn off the main power switch while they are operating. The component may be damaged if you try to remove it when it is not in the home position.

AIO

The AIO consists of the OPC drum, charge roller, development unit, cleaning components and toner tank. Observe the following precautions when handling the AIO.

1. Never touch the drum surface with bare hands. If the drum surface is dirty or if you have accidentally touched it, wipe it with a dry cloth, or clean it with wet cotton and then wipe it dry with a cloth.
2. Never use alcohol to clean the drum. Alcohol will dissolve the drum surface.
3. Store the AIO in a cool dry place.
4. Do not expose the drum to corrosive gases (ammonia, etc.).
5. Do not shake a used AIO, as this may cause toner to spill out.
6. Dispose of used AIO components in accordance with local regulations.

Transfer Roller

1. Never touch the surface of the transfer roller with bare hands.
2. Be careful not to scratch the transfer roller, as the surface is easily damaged.

Scanner Unit

1. Use alcohol or glass cleaner to clean the exposure and scanning glass. This will reduce the static charge on the glass.
2. Use a blower brush or a water-moistened cotton pad to clean the mirrors and lenses.
3. Make sure to not bend or crease the exposure lamp's ribbon cable.
4. Do not disassemble the lens unit. This will cause the lens and copy image to get out of focus.
5. Do not turn any of the LED positioning screws. This will put the LED out of position.

Laser Unit

1. Do not loosen or adjust the screws securing the LD drive board on the LD unit. This will put the LD unit out of adjustment.
2. Do not adjust the variable resistors on the LD unit. These are adjusted at the factory.
3. The polygonal mirror and F-theta lens are very sensitive to dust.
4. Do not touch the toner shield glass or the surface of the polygonal mirror with bare hands.

Fusing Unit

1. After installing the fusing thermistor, make sure that it is in contact with the hot roller and that the roller can rotate freely.
2. Be careful to avoid damage to the hot roller stripper pawls and their tension springs.
3. Do not touch the fusing lamp and rollers with bare hands.
4. Make sure that the fusing lamp is positioned correctly and that it does not touch the inner surface of the hot roller.

Paper Feed

1. Do not touch the surface of the paper feed rollers.
2. To avoid misfeeds, the side and end fences in each paper tray must be positioned correctly so as to align with the actual paper size.

4.1.2 LITHIUM BATTERIES

⚠CAUTION

- Incorrect replacement of lithium battery(s) on the controller or on the fax unit poses risk of explosion. Replace only with the same type or with an equivalent type recommended by the manufacturer. Discard used batteries in accordance with the manufacturer's instructions.

4.1.3 HALOGEN-FREE CABLE

⚠CAUTION

- Use extreme caution while handling cables.

To comply with local regulations, halogen-free cables are used in this machine. Halogen-free cables are environment-friendly, but no stronger than conventional cables. These cables may be damaged in any of the following cases:

- The cable is caught between hard objects such as brackets, screws, PCBs, and exterior covers.
- The cable is rubbed on a hard object such as brackets, screws, PCBs, and exterior covers.
- The cable is scratched with a hard object such as brackets, screws, PCBs, exterior covers, screwdrivers, and fingernails.

4.2 SPECIAL TOOLS AND LUBRICANTS

Part Number	Description	Q'ty
A1849501	Optics Adjustment Tools (2 pcs/set)	1 set
A2929500	Test Chart – S5S (10 pcs/set)	1 set
VSSM9000	Digital Multimeter – Fluke 87	1
A2579300	Grease Barrierta – S552R	1
52039502	Silicon Grease 501	1
B6455010	SD Card	1

4.3 ADJUSTING COPY IMAGE AREA

Adjust the copy image area under any of the following conditions:

1. After clearing engine data (SP5-801-002).
2. After replacing any of the following components:
   - First scanner or second scanner
   - Lens block
   - Scanner motor
   - Polygon mirror motor
   - Paper tray

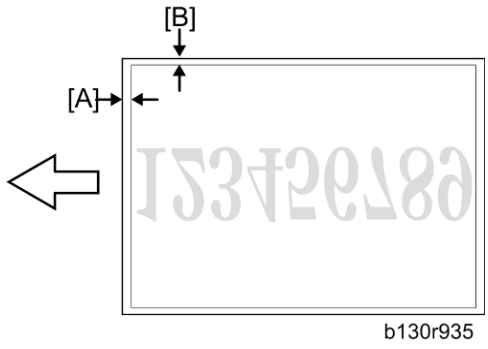
4.3.1 PRINTING

Make sure that the paper is correctly loaded in each paper tray before starting the adjustment procedures in this section.

Adjusting Registration

Use the Trimming Area Pattern (SP5-902-001 > 10) for this adjustment.

1. Print out the test pattern with the paper fed from the regular paper tray.
2. Print out the test pattern with the paper fed from the by-pass tray.
3. Print out the test pattern by selecting duplex printing.



b130r935

4. Measure the distance between the leading edge of the image area and the leading edge of the paper [A].

Note

- The diagram shows the paper on the copy tray. Note that the paper is output with the face down.

SP	Specification
SP1-001-001 (All Trays)	0 ± 2 mm
SP1-001-002 (By-pass)	0 ± 2 mm
SP1-001-003 (Duplex)	0 ± 4 mm

5. Adjust the leading edge registration (SP1-001).
6. Measure the distance between the side edge of the image area and the side edge of the paper [B].

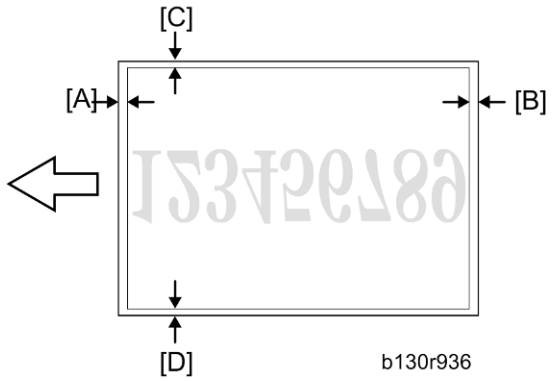
SP	Specification
SP1-002-001 (1st tray)	0 ± 2 mm
SP1-002-002 (2nd tray)	0 ± 2 mm
SP1-002-005 (By-pass)	0 ± 4 mm
SP1-002-006 (Duplex)	0 ± 4 mm

7. Adjust the side-to-side registration (SP1-002).
8. Specify "0" (zero) in SP5-902-001 after finishing the adjustment procedure.

Adjusting Blank Margin

Use the Trimming Area Pattern (SP5-902-001 > 10) for this adjustment.

1. Print out the test pattern.



2. Measure the distance between the four edges of the image area and the four edges of the paper [A][B][C][D].

Note

- The diagram shows the paper on the copy tray. Note that the paper is output with the face down.

3. Adjust the blank margin (SP2-101).

SP	Specification
SP2-101-001 (Leading Edge) [A]	2 ± 1.5 mm
SP2-101-002 (Trailing Edge) [B]	2 +2.5/-1.5 mm
SP2-101-003 (Left Side) [C]	2 ± 1.5 mm
SP2-101-004 (Right Side) [D]	2 +2.5/-1.5 mm

Note

- The "Left Side" and "Right Side" comes to your left-hand side and right-hand side respectively when you view the copied image with the leading edge upwards.

4. Specify "0" (zero) in SP5-902-001 after finishing the adjustment procedure.

Adjusting Main-Scan Magnification

Use the Grid Pattern (Single Dot) (SP5-902-001 > 5) for this adjustment.

SP	Specification
SP2-998-001 (Main Mag-print)	100 ± 1%

1. Print out the test pattern.
2. Measure the sides of squares. Each side should be 2.7-mm long.)
3. Adjust the main-scan magnification (SP2-998-001: Main Mag-print).
4. Specify "0" (zero) in SP5-902-001 after finishing the adjustment procedure.

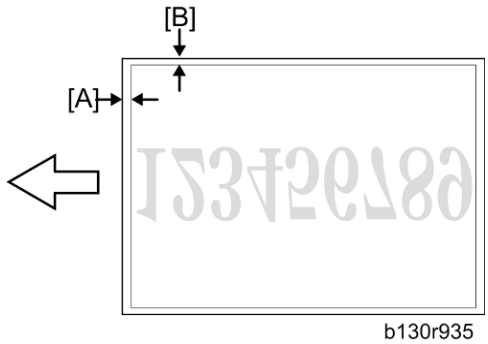
4.3.2 SCANNING

Preparation:

- Before adjusting scanning, adjust printing (☛ "Printing" in this section).
- To adjust scanning, use the A4 test chart.

Adjusting Registration

1. Place the test chart on the exposure glass. Make sure that the test chart is aligned with the rear and left scales on the exposure glass.
2. Make a copy.



b130r935

3. Measure the distance between the leading edge of the image area and the leading edge of the paper [A].

Note

- The diagram shows the paper on the copy tray. Note that the paper is output with the face down.

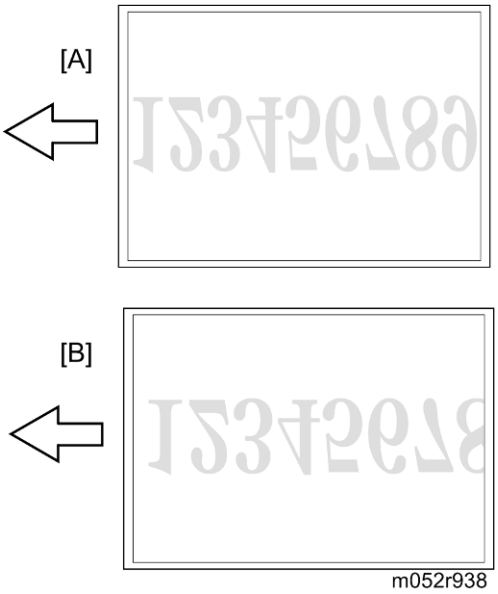
4. Adjust the leading-edge scan registration. (SP4-010-001).

SP	Specification
SP4-010-001 (Leading Edge Registration Adj)	0 ± 2 mm

5. Measure the distance between the side edge of the image area and the side edge of the paper [B].
6. Adjust the side-to-side registration (SP4-011-001).

SP	Specification
SP4-011-001 (Main Scan Reg)	0 ± 2.5 mm

Adjusting Magnification



1. Place the test chart on the exposure glass. Make sure the test chart is aligned with the rear and left scales on the exposure glass.
2. Make a copy.
3. Compare the copy with the original.
4. Adjust the main-scan and sub-scan magnifications. The original image [A] is magnified in the sub-scan direction [B] when you specify a larger value.

Note

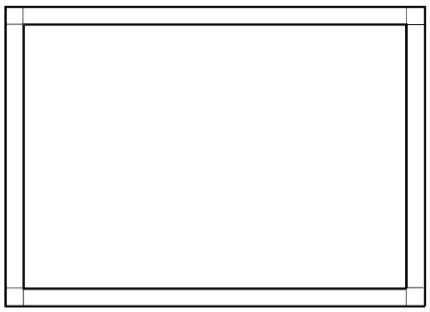
- The diagrams show the paper on the copy tray. Note that the paper is output with the face down.

SP	Specification
SP4-008-001 (Sub Scan Magnification Adj)	± 1.0%

4.3.3 DF IMAGE ADJUSTMENT

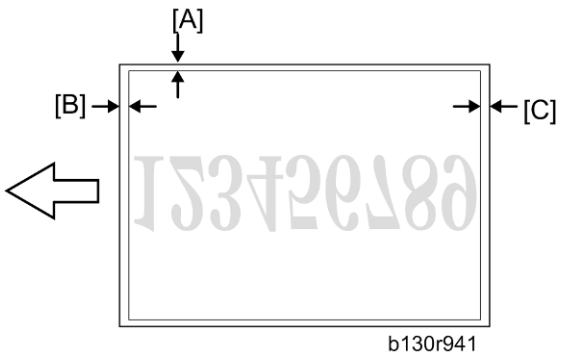
Note

- Perform the adjustment procedure in this section only when the ARDF is installed on the copier.



b130r967

1. Make a temporary test chart as shown in the above diagram. Use the “A4/8.5 x 11" paper to make it.
2. Place the temporary test chart on the ARDF.
3. Make a copy.



b130r941

4. Measure the distance between the side edge of the image area and the side edge of the paper [A].
   (The diagram shows the paper on the copy tray. Note that the paper is output with the face down.)
5. Adjust the side-to-side registration (S to S/Front Regist: SP6-006-001, S to S/Rear Regist:

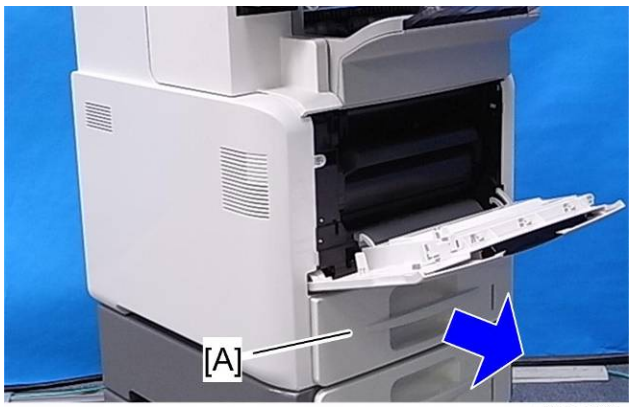
SP6-006-002). The image area moves to the rear side of the copier when you specify a larger value.

6. Measure the distance between the leading of the image area and the leading edge of the paper [B].
7. Adjust the leading edge registration (Leading Regist: SP6-006-003). The image area moves to the right side of the copier when you specify a larger value.
8. Measure the distance between the trailing edge of the image area and the trailing edge of the paper [C].
9. Adjust the erased area on the trailing edge (Trailing Erase: SP6-006-007).
10. Compare the copy with the original.
11. Adjust the sub-scan magnification (SP6-017-001). The specification is ±1.0%.

4.4 EXTERIOR COVERS

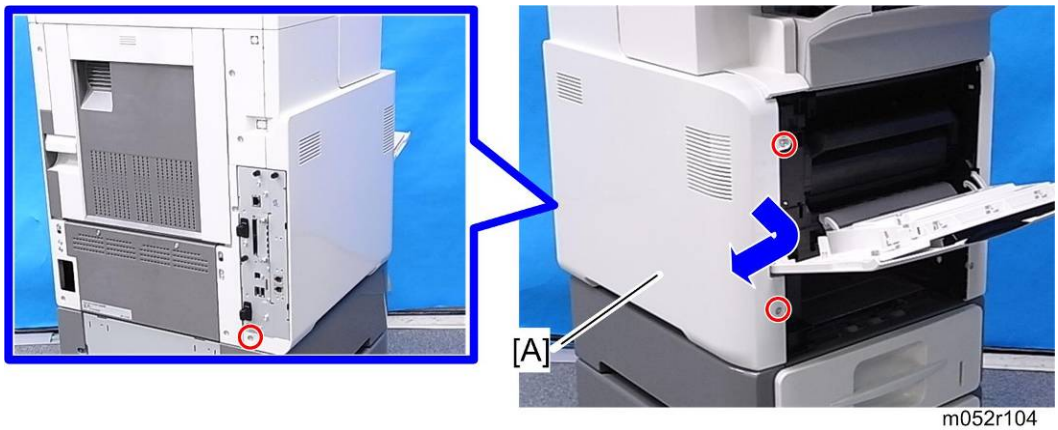
4.4.1 LEFT COVER

1. Open the frond door.



m052r103

2. Pull out the tray 1 [A].

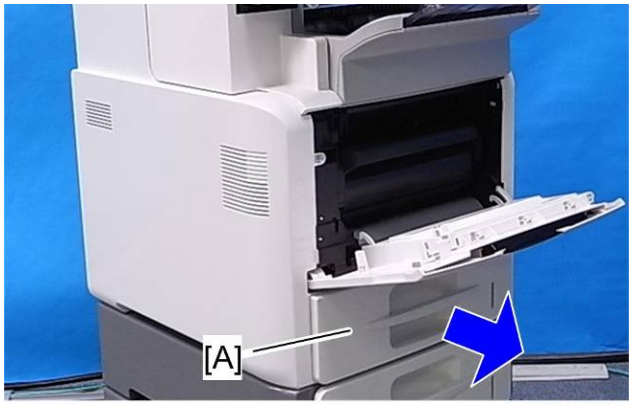


m052r104

3. Left cover [A] (x 3)

4.4.2 RIGHT COVER

1. Open the frond door.



m052r103

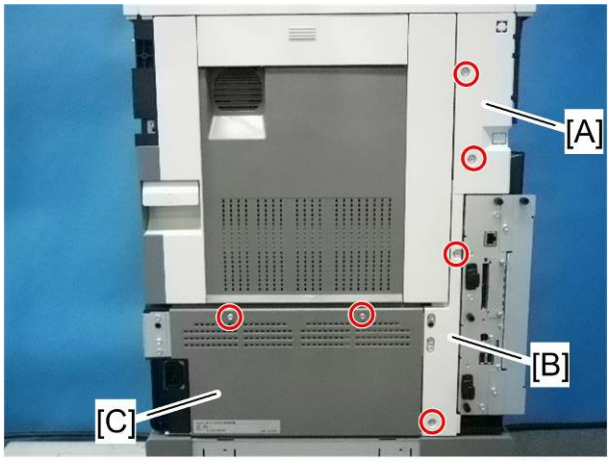
2. Pull out the tray 1 [A].

m052r107

3. Right cover [A] (x 3)

4.4.3 REAR LOWER COVER

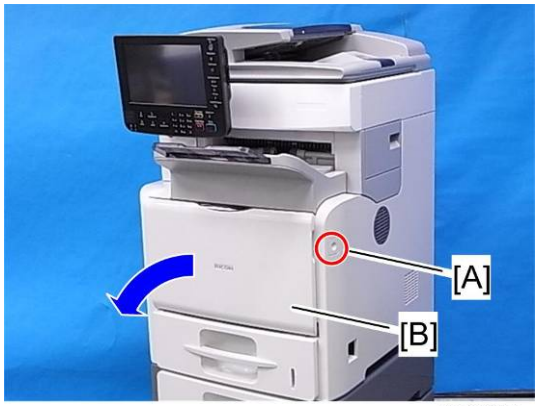
1. Right cover (☛Right Cover)
2. Left cover (☛Left Cover)



m052r108

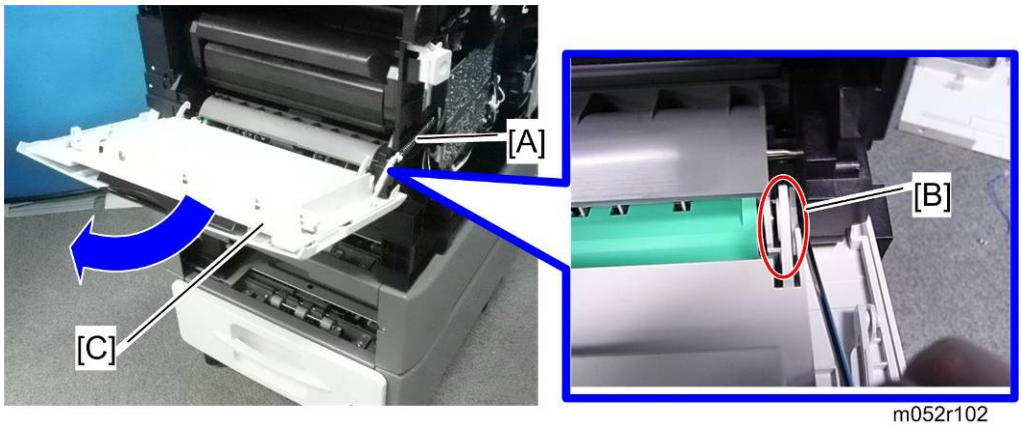
3. Rear left upper cover [A] (x 2)
4. Rear left lower cover [B] (x 2)
5. Rear lower cover [C] (x 2)

4.4.4 FRONT DOOR



m052r101

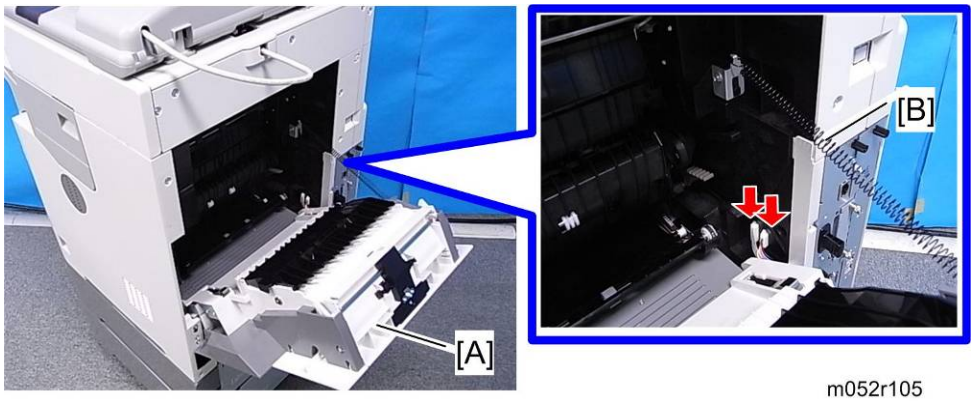
1. Press the front cover release button [A].
2. Open the front door [B].
3. Pull out the tray.
4. Right cover (☛Right Cover)



m052r102

5. Release the spring [A].
6. Release the right arm [B] of the front cover.
7. Front door [C]

4.4.5 DUPLEX UNIT



m052r105

1. Open the duplex unit [A].
2. Release the spring [B] and two harnesses of the duplex unit.

m052r106

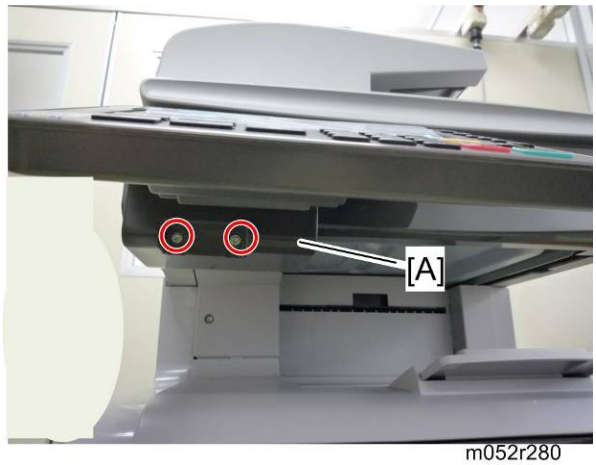
3. Duplex unit [A]

4.4.6 OPERATION PANEL UNIT

Operation Panel Unit

Operation Panel Frame Cover Removal

For M052 model

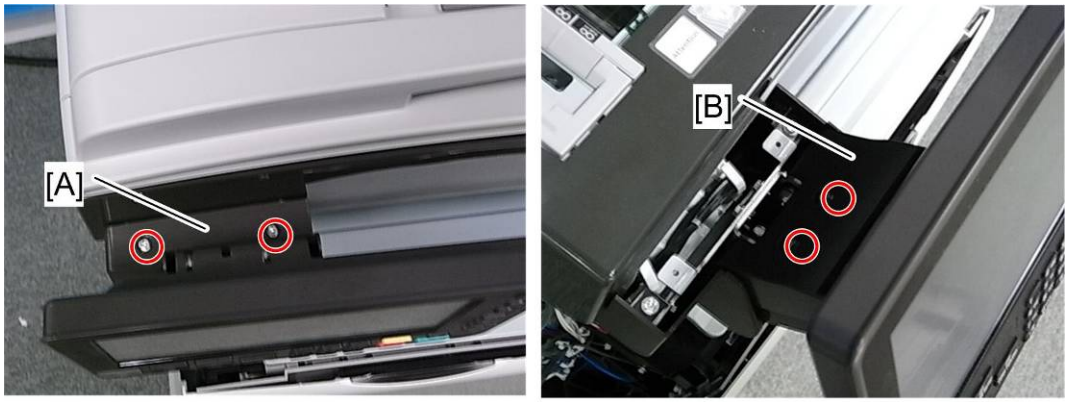


m052r280

1. Operation panel lower cover [A] (x 2)
2. Remove the operation panel upper cover.

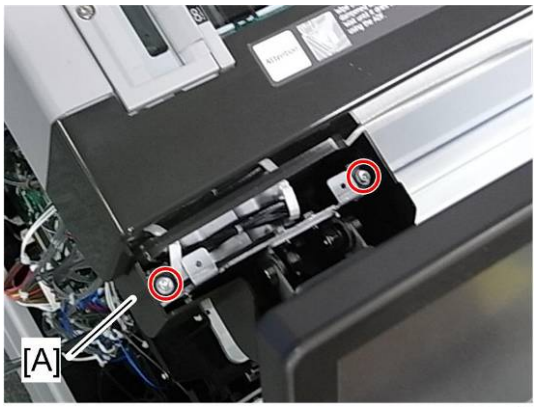
For M053/ M054 model

1. Internal finisher (For M054 model) (☛p.4-104)



m052r540

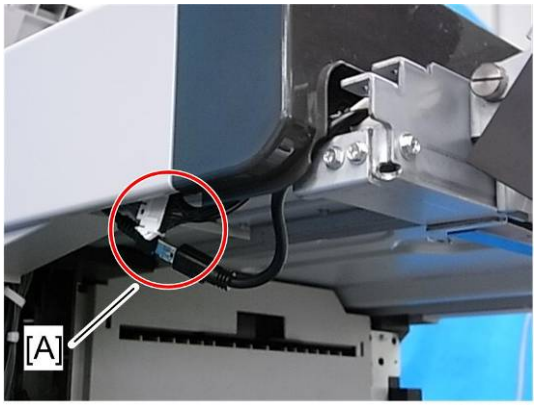
2. Operation panel frame upper cover [A] (x 2)
3. Operation panel arm upper cover [B] (x 2)



m052r541

4. Operation panel frame lower cover [A] (x 2)

Operation Panel Unit Removal

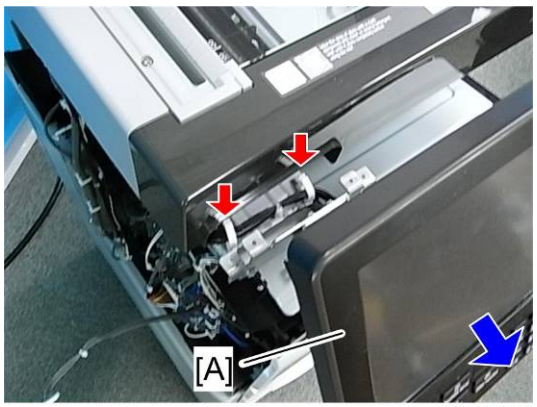


m052r542

5. Disconnect the harness and USB cable [A].

m052r543

6. Remove the three screws.

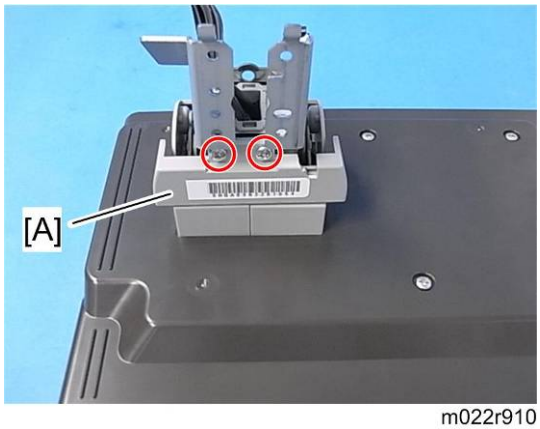


m052r544

7. Operation panel unit [A] (x 2)

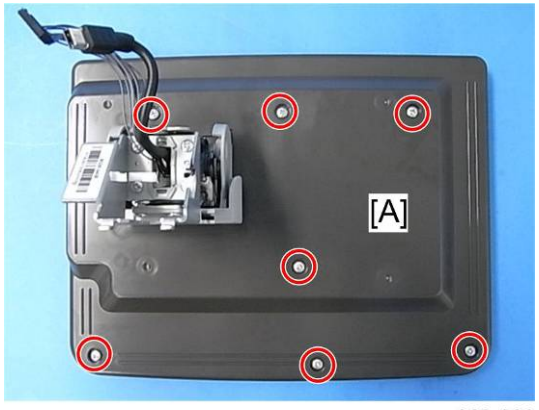
Key Tops

1. Operation panel unit (p.4-16)



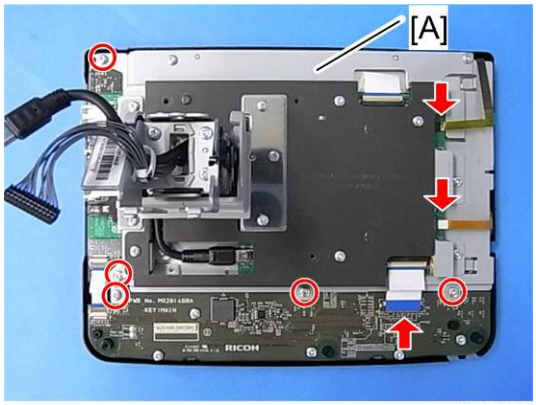
m022r910

2. Operation panel arm holder [A] (x 2)



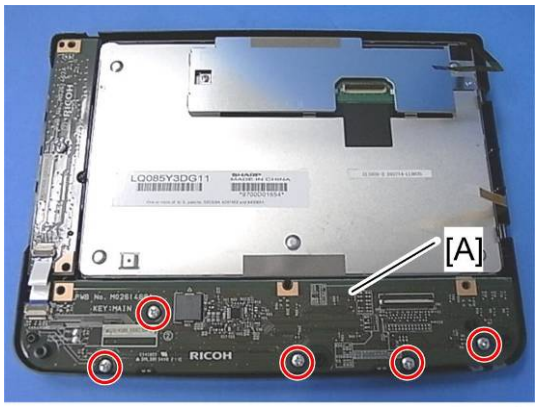
m022r909

3. Operation panel rear cover [A] (x 7)



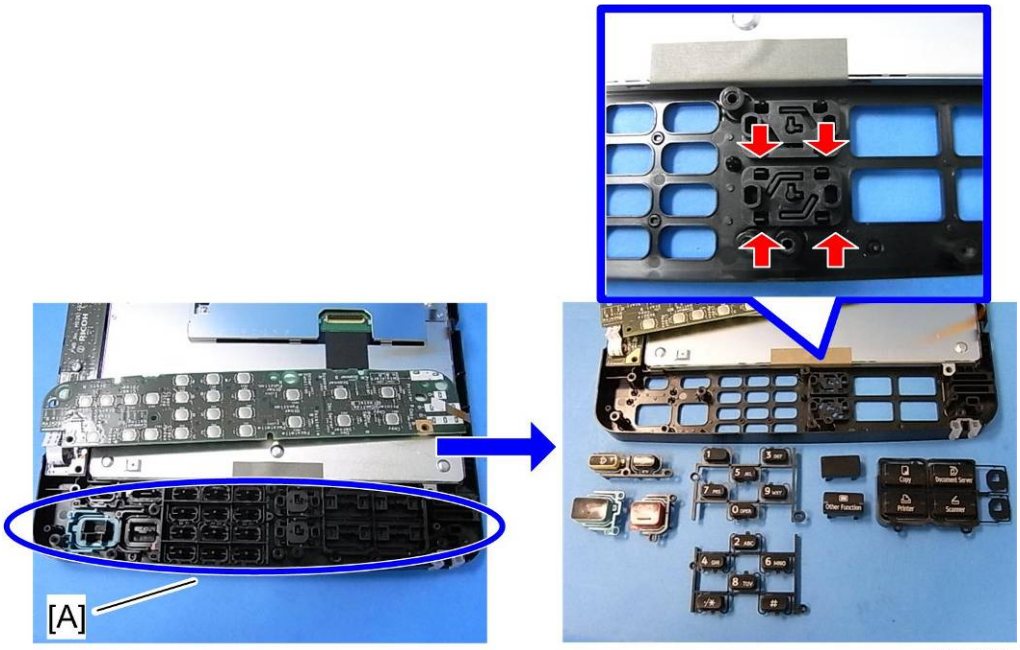
m022r908

4. Operation panel bracket [A] (x 5, x 3)



m022r907

5. Release the Key: main board [A] (x 5)



m022r906

6. Key tops [A] (hooks)

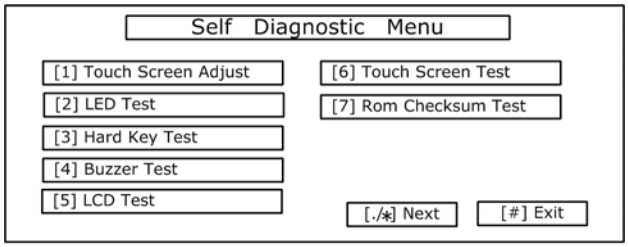
4.4.7 TOUCH PANEL POSITION ADJUSTMENT

Note

- It is necessary to calibrate the touch panel at the following times:
- When you replace the operation panel.
- When you replace the controller board.
- When the touch panel detection function does not operate correctly

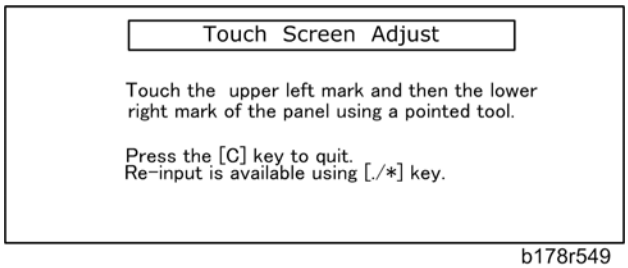
Do not use items [2] to [9] on the Self-Diagnostic Menu. These items are for design use only.

1. Press , press "1" "9" "9" "3" key, press "Clear/Stop" key 5 times to open the Self-Diagnostics menu.



b178r548

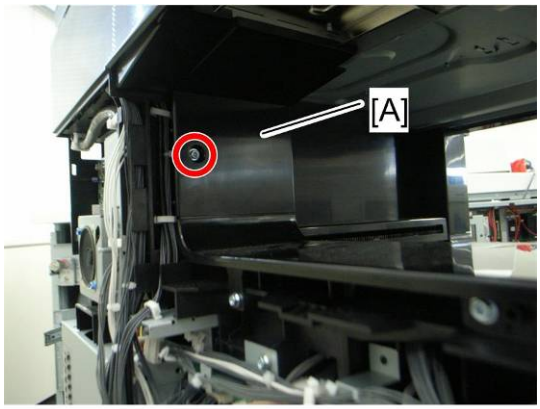
2. On the touch screen press “Touch Screen Adjust” (or press "1" key).
3. Use a pointed (not sharp) tool to press the upper left mark .


Touch Screen Adjust
Touch the upper left mark and then the lower right mark of the panel using a pointed tool.
Press the [C] key to quit.
Re-input is available using [./*] key.
b178r549

4. Press the lower right mark when “” shows.
5. Press [#] OK on the screen (or press) when you are finished.
6. Touch [#] Exit on the screen to close the Self-Diagnostic menu. Save the calibration settings.

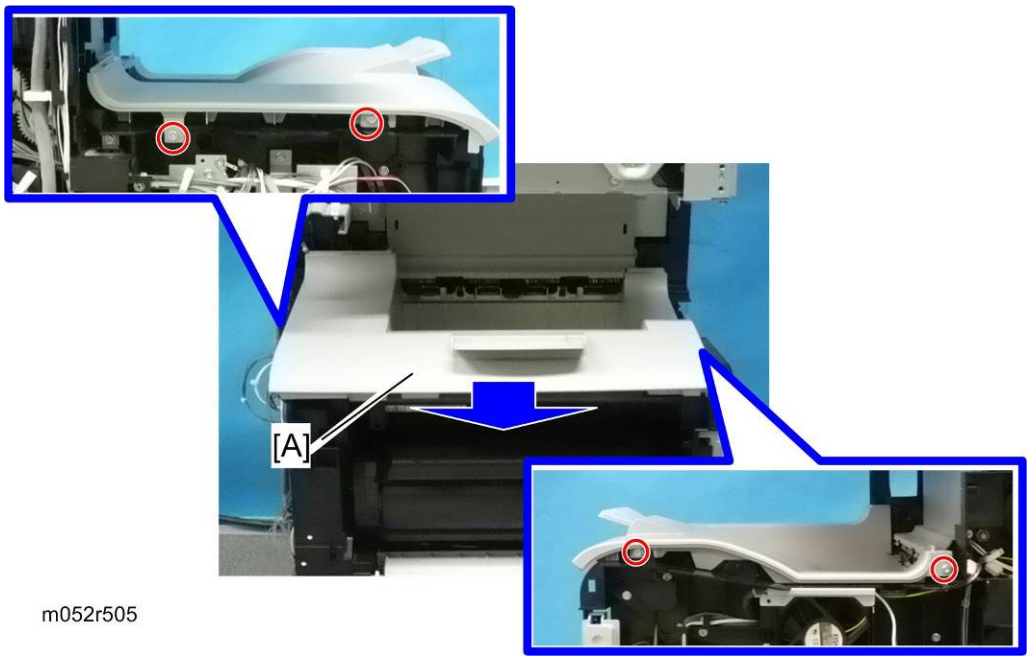
4.4.8 OUTPUT TRAY (M052/M053 MODELS ONLY)

1. Left cover (☛p.4-11)
2. Right cover (☛p.4-12)
3. Only for M053, remove the 1 bin tray unit (☛p.4-126).



m050r504

4. Inner left cover [A]



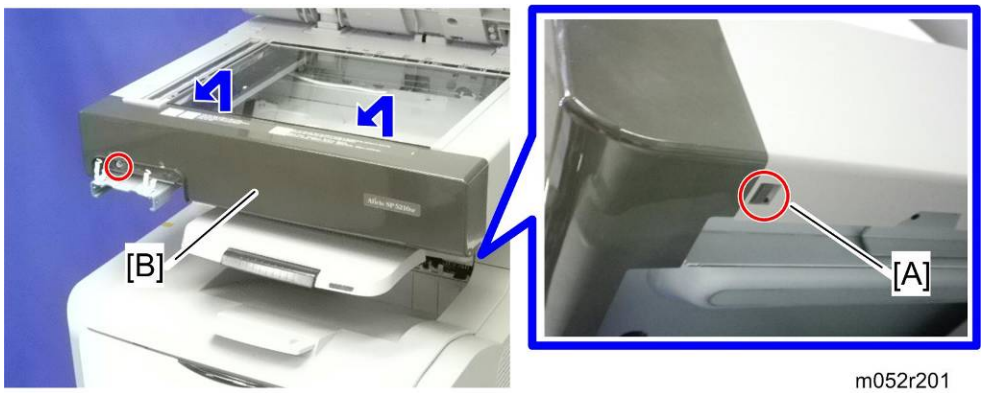
m052r505

5. Output tray [A] (x 4)

4.5 SCANNER UNIT

4.5.1 SCANNER FRONT COVER

1. Open the ARDF.
2. Operation panel unit (☛p.4-16)

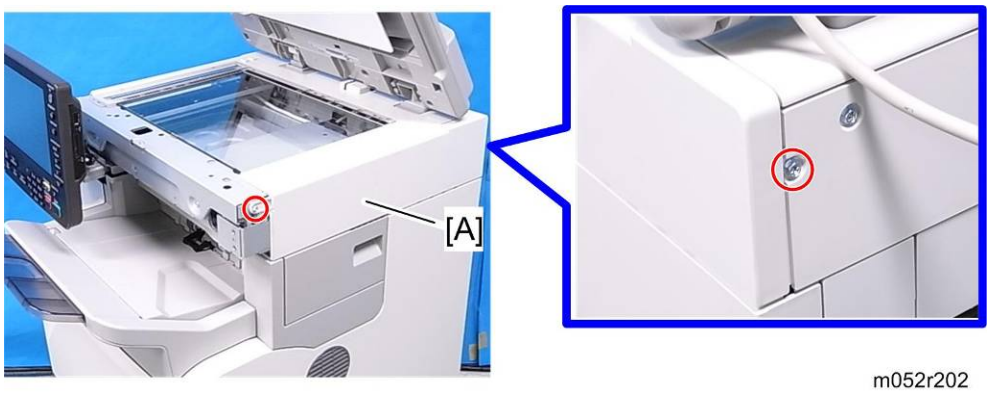


3. Release the hook [A] under the scanner unit.
4. Scanner front cover [B] (x 1, hook x 1, boss x 2)

4.5.2 SCANNER RIGHT AND LEFT COVERS

Scanner Right Cover

1. Scanner front cover (☛p.4-22)



2. Scanner right cover [A] (x 2)

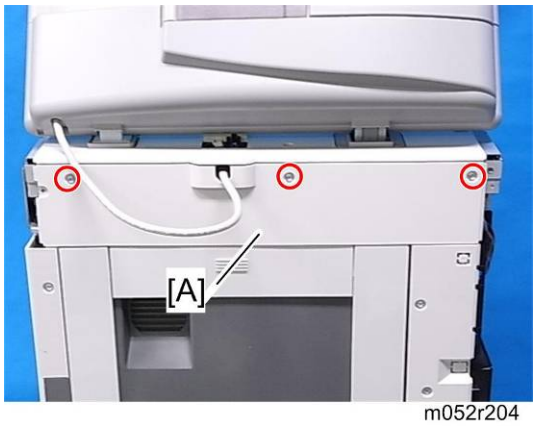
Scanner Left Cover

1. Scanner front cover (☛p.4-22)

2. Scanner left cover (x 2)

4.5.3 SCANNER REAR COVER

1. Scanner front cover (☛p.4-22)
2. Scanner right and left covers (☛p.4-23)

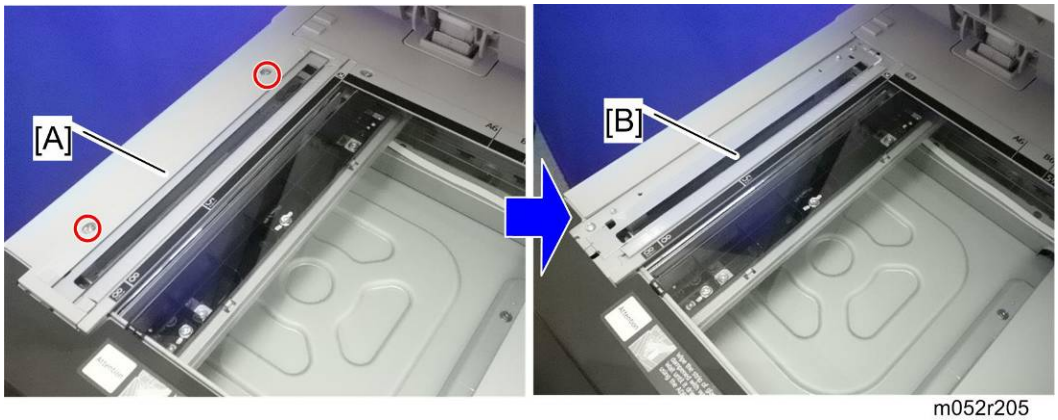


m052r204

3. Scanner rear cover [A] (x 3)

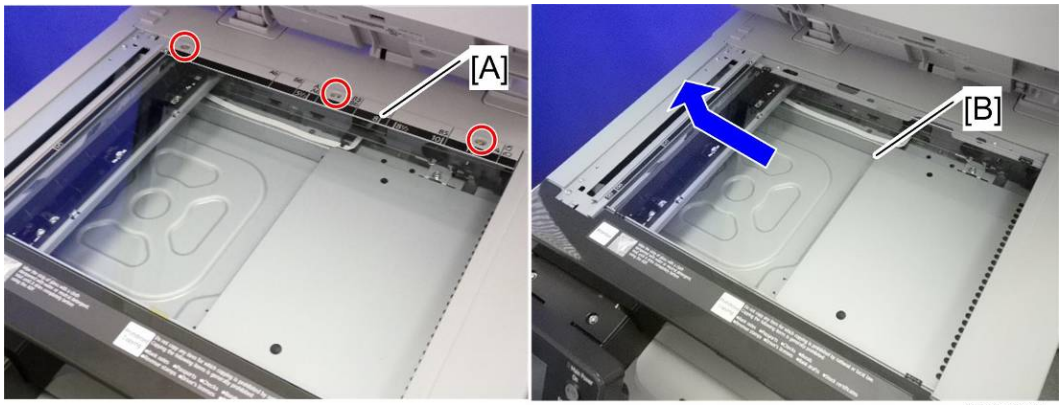
4.5.4 EXPOSURE GLASS

1. Open the ARDF.



m052r205

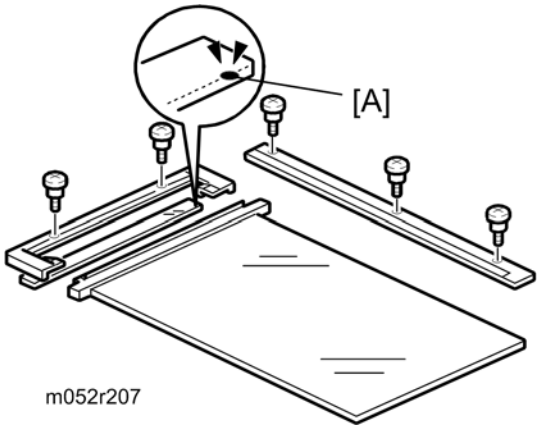
2. Glass cover [A] (x 2)
3. DF exposure glass [B]



m052r206

4. Rear scale [A] (x 3)
5. Exposure glass [B] with the left scale

When reassembling the ARDF exposure glass



m052r207

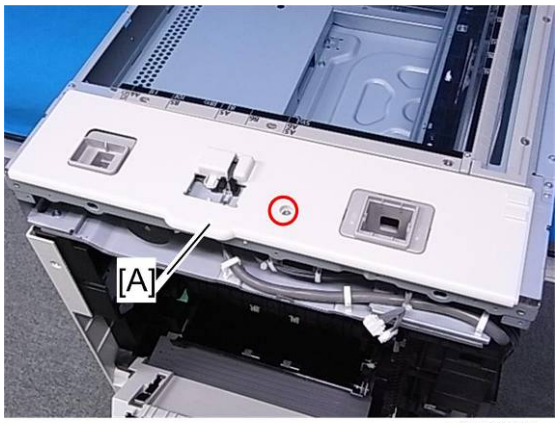
Position the blue marker [A] at the rear-right corner when you reattach the ARDF exposure glass.

4.5.5 LED BOARD

Note

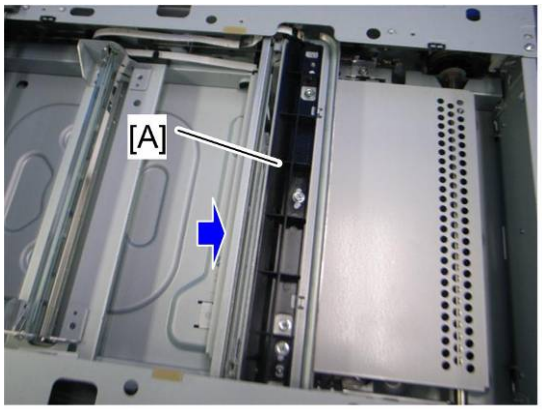
- Do not touch a new LED board directly by hands. Oily spots on the LED board will cause poor scanning quality.

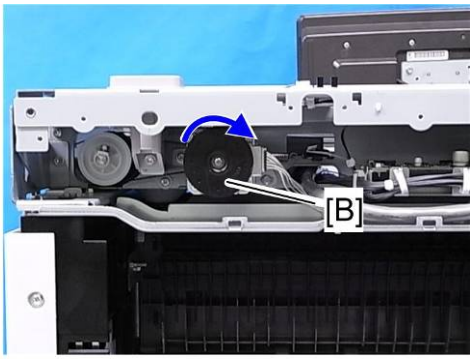
1. ARDF (☛p.4-87)



m052r208

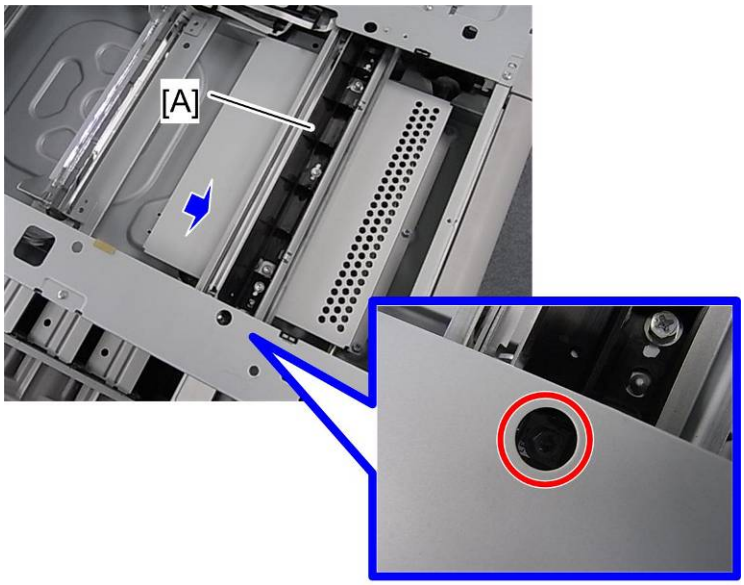
2. Scanner top rear cover (x 1)
3. Exposure glass (☛p.4-25)





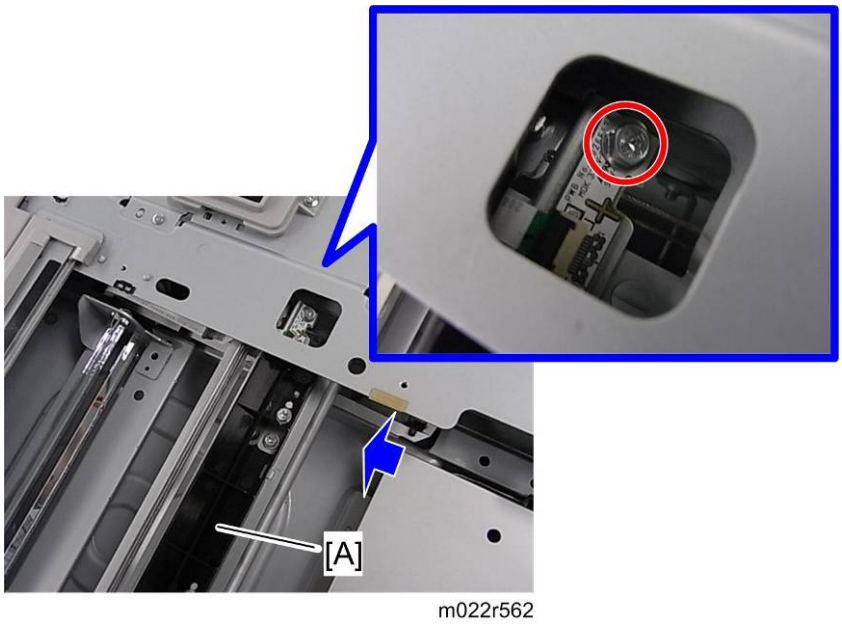
m052r209

4. Move the 1st scanner carriage [A] to the right side by rotating the scanner motor [B] clockwise in view of the rear.



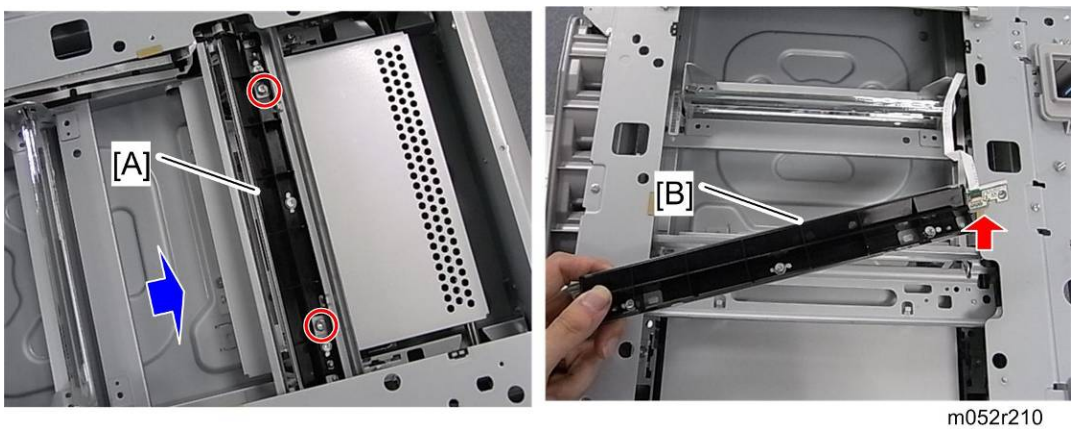
m022r561

5. Remove the screw at the front side of the 1st scanner carriage.



m022r562

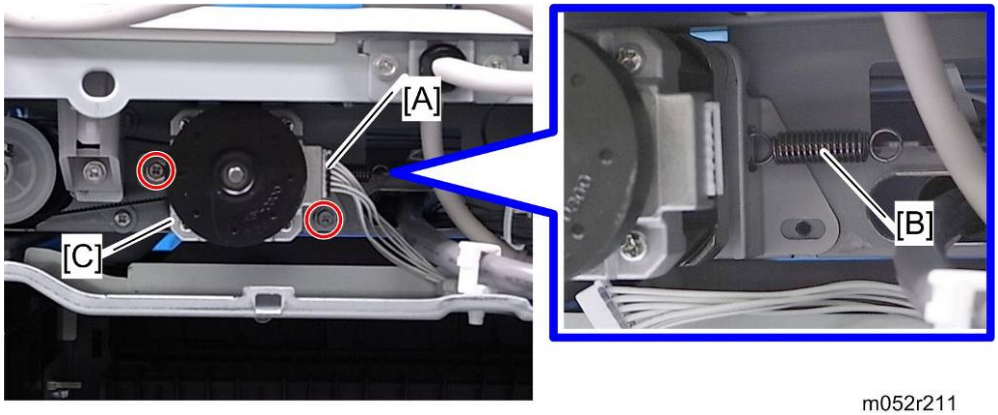
6. Move back the 1st scanner carriage [A] to the left side by rotating the scanner motor counterclockwise in view of the rear.
7. Remove the screw at the rear side of the 1st scanner carriage.



8. Move the 1st scanner carriage [A] to the cutout position [B] by rotating the scanner motor clockwise.
9. LED board [B] (x 2, x 1)

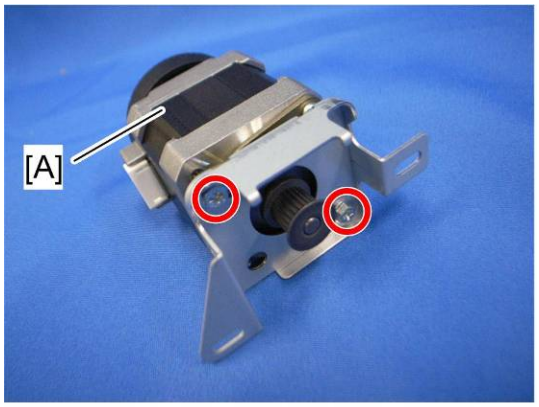
4.5.6 SCANNER MOTOR

1. Scanner rear cover (☛p.4-24)



m052r211

2. Disconnect the harness [A] and remove the spring [B]
3. Scanner motor bracket [C] (x 2, timing belt x 1)



m022r545

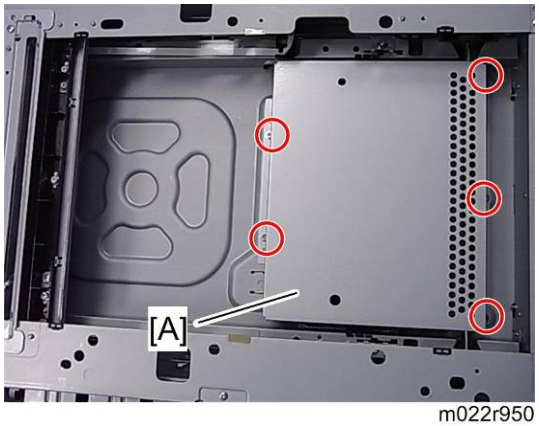
4. Scanner motor [A] (x 2)

Note

- Do the scanner image adjustment after replacing the scanner motor (see "Image Adjustment").

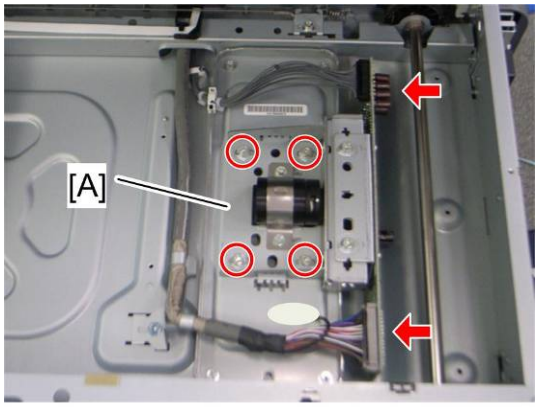
4.5.7 SENSOR BOARD UNIT (SBU)

1. Scanner top rear cover (☛p.4-26 "LED Board")
2. Exposure glass (☛p.4-25)



m022r950

3. Bracket [A] (x 5)



m052r558

4. Sensor board unit [A] (x 4, x 2)

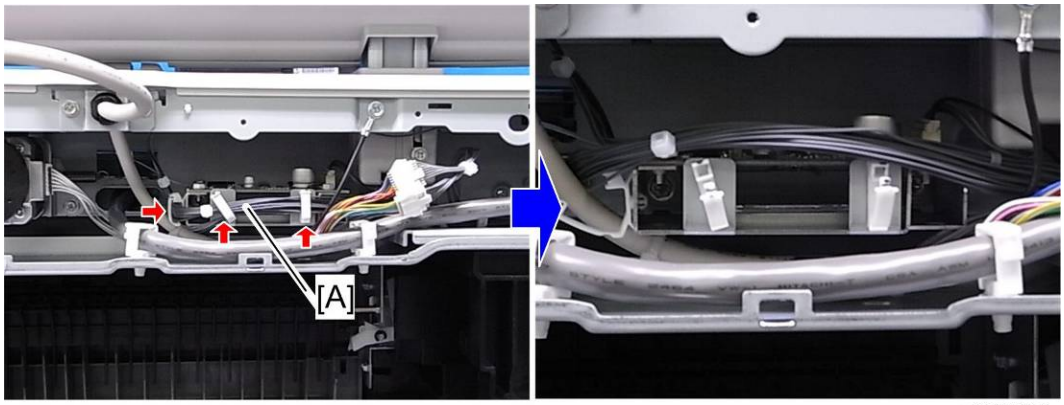
When reassembling

Adjust the following SP modes after you replace the sensor board unit:

- SP4–008 (Sub Scan Magnification Adj): See "Image Adjustment: Scanning"(☛p.4-7).
- SP4–010 (Leading Edge Registration Adj): See "Image Adjustment: Scanning"(☛ p.4-7)).
- SP4–011 (Main Scan Reg): See "Image Adjustment: Scanning"(☛ p.4-7).
- SP4–688 (DF: Density Adjustment): Use this to adjust the density level if the ID of outputs made in the DF and Platen mode is different.

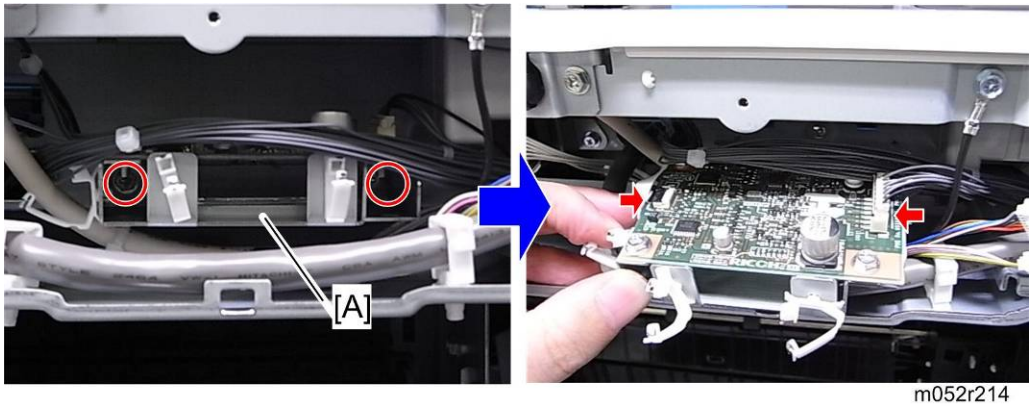
4.5.8 LED DRIVE BOARD

1. Scanner rear cover (☛ p.4-24)



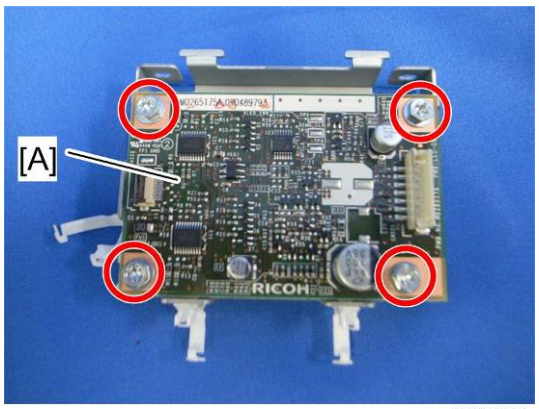
m052r213

2. Release the harness [A] from three clamps, and then take it aside.



m052r214

3. LED drive board bracket [A] (x 2, x 2)

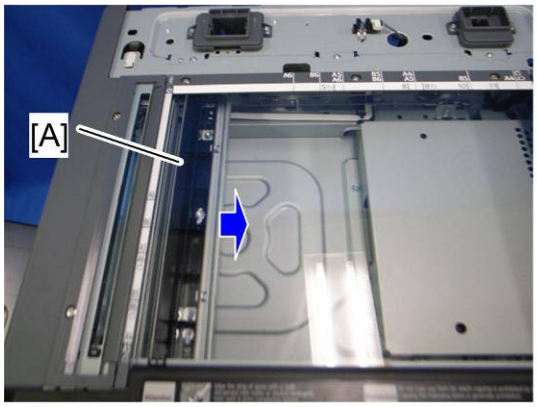


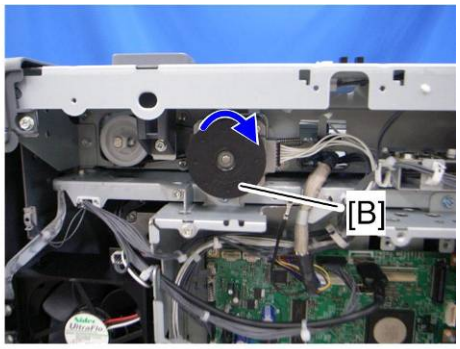
m022r548

4. LED drive board [A] (x 4)

4.5.9 SCANNER HP SENSOR

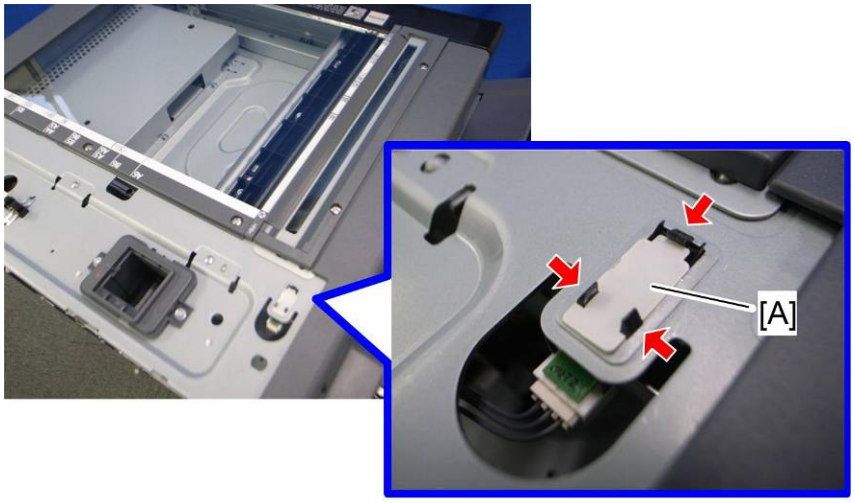
1. ARDF (☛p.4-87)
2. Scanner top rear cover (☛p.4-26 "LED Board")





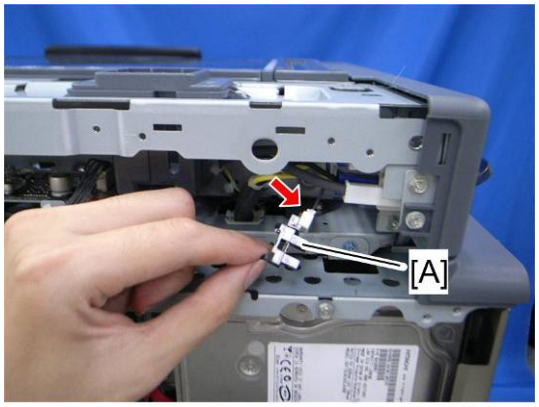
m022r551

3. Move the 1st scanner carriage [A] to the right side by rotating the scanner motor [B].



m022r552

4. Remove the mylar [A].

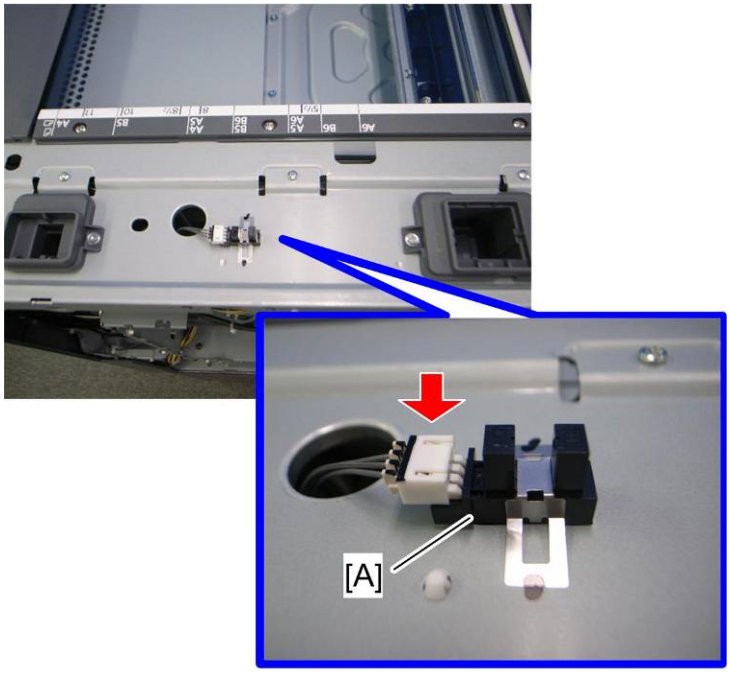


m022r553

5. Scanner HP sensor [A] (x 1, hooks).

4.5.10 COVER SENSOR

1. ARDF (☛p.4-87)
2. Scanner top rear cover (☛p.4-26 "LED Board")

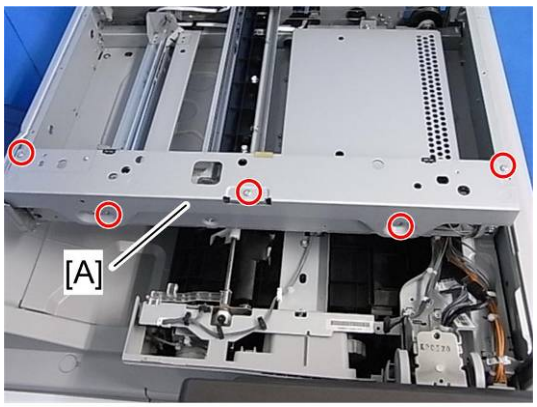


m022r550

3. Cover sensor [A] (☞ x 1, hooks)

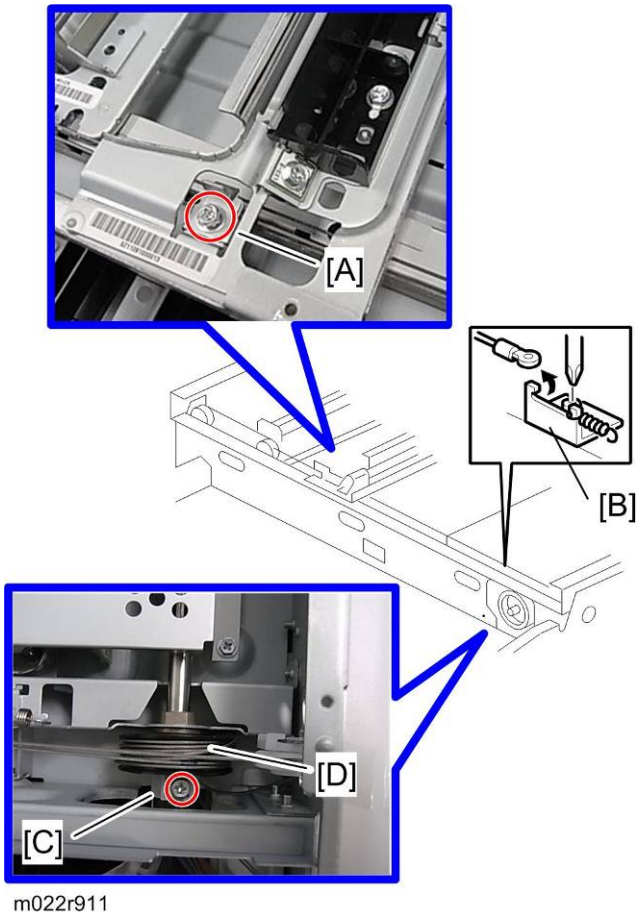
4.5.11 FRONT SCANNER WIRE

1. Exposure glass (☛p.4-25)
2. ARDF (☛p.4-87)
3. Scanner top rear cover (☛ p.4-26 "LED Board")



m022r917

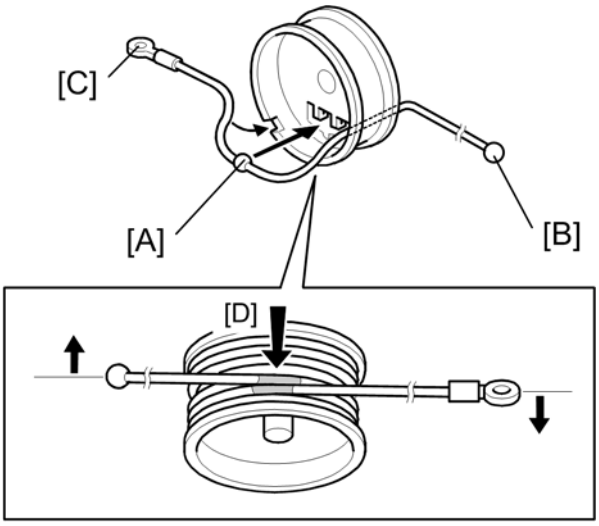
4. Scanner front frame [A] (x 5)



m022r911

5. Front scanner wire holder [A] (x 1)
6. Front scanner wire bracket [B] (x 1)
7. Front scanner wire, white clip [C] and scanner drive pulley [D] (x 1)

Reinstalling the Front Scanner Wire

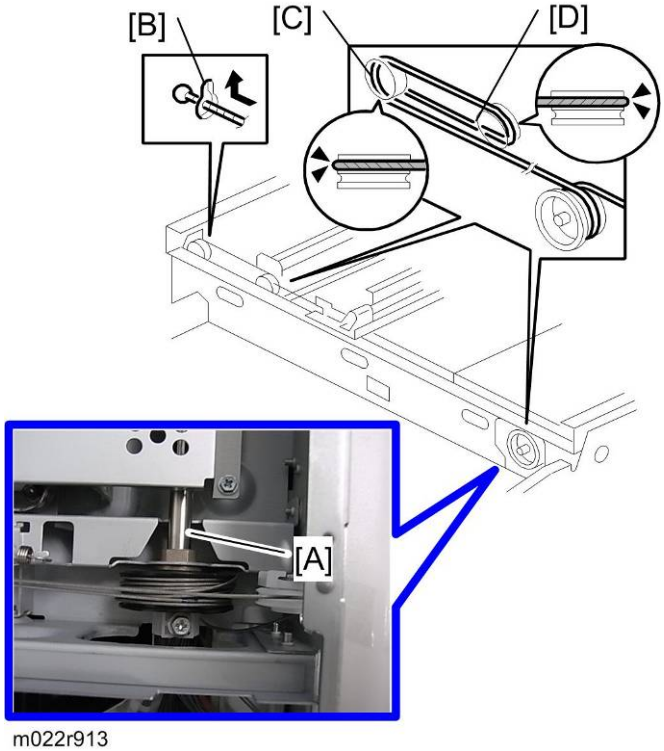


m022r912

1. Position the center ball [A] in the middle of the forked holder.
2. Pass the right end (with the ball) [B] through the square hole. Pass the left end (with the ring) [C] through the notch.
3. Wind the right end counterclockwise (shown from the machine's front). Wind the left end clockwise.

Note

- The two blue marks [D] come together when you have done this. Stick the wire to the pulley with tape. This lets you easily handle the assembly at the time of installation.



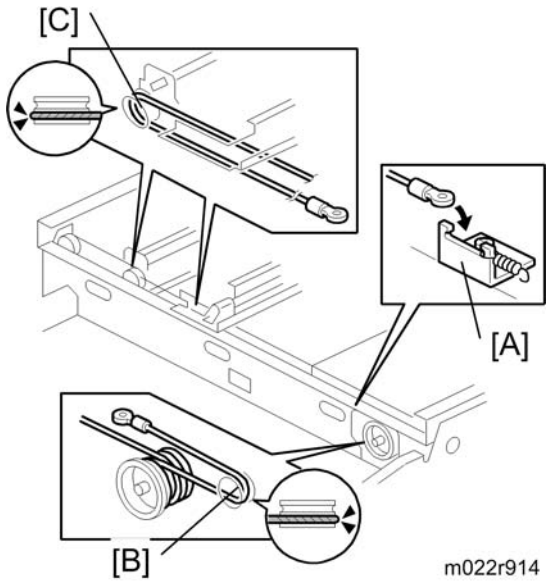
m022r913

4. Install the drive pulley on the shaft [A].

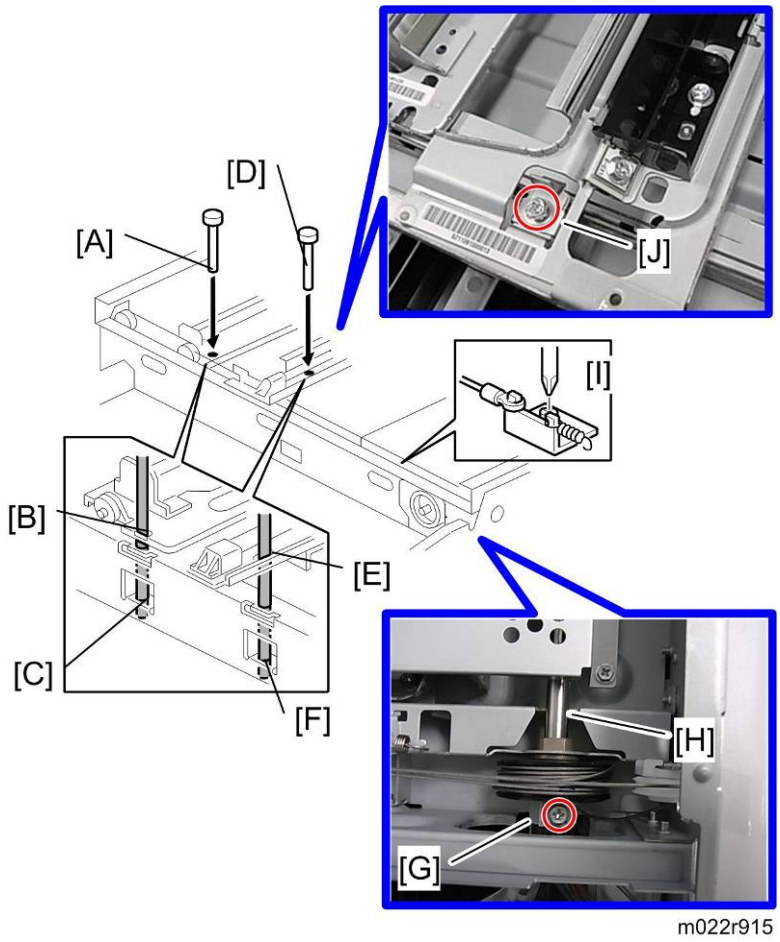
Note

- Do not secure the pulley to the shaft at this time.

5. Insert the left end into the slit [B]. The end should go via the rear track of the left pulley [C] and the rear track of the movable pulley [D].



6. Hook the right end onto the front scanner wire bracket [A]. The end should go via the front track of the right pulley [B] and the front track of the movable pulley [C].



m022r915

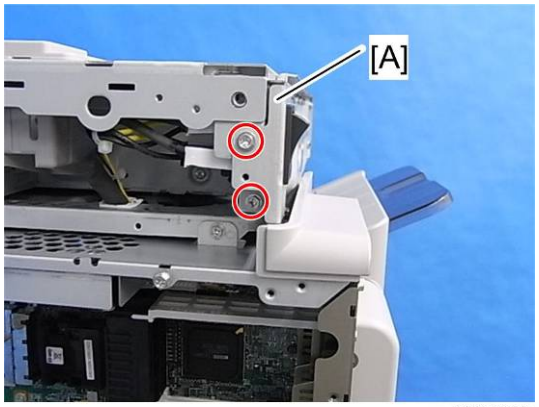
7. Remove the tape from the drive pulley.
8. Insert a scanner-positioning pin [A] through the 2nd carriage hole [B] and the left holes [C] in the front rail. Insert another scanner positioning pin [D] through the 1st carriage hole [E] and the right holes in the front rail [F].
9. Insert two more scanner positioning pins through the holes in the rear rail.
10. Install the white clip [G] and drive pulley to the shaft [H] (x 1).
11. Screw the scanner wire bracket to the front rail [I].
12. Screw the scanner wire holder [J].
13. Pull out the positioning pins.

Note

- Make sure the 1st and 2nd carriages move smoothly after you remove the positioning pins. Do steps 8 through 13 again if they do not.

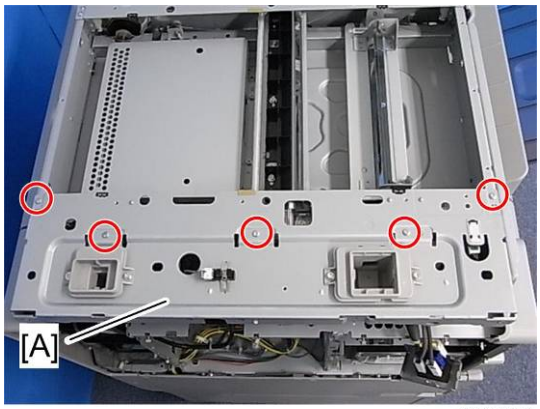
4.5.12 REAR SCANNER WIRE

1. Exposure glass (☛p.4-25)
2. ARDF (☛p.4-87)
1. Scanner top rear cover (☛ p.4-26 "LED Board")



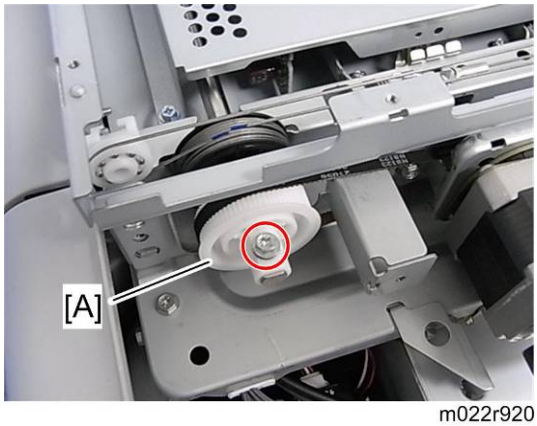
m022r918

2. Main power switch bracket [A] (x 2)



m022r919

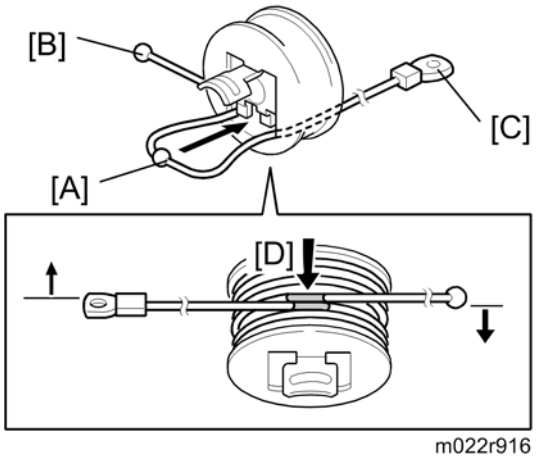
3. Scanner rear frame [A] (x 5)



m022r920

4. White pulley [A] (x 1)
5. Follow steps 5 through 7 in the "Front Scanner Wire" Section. You can remove the rear scanner wire with the same manner for replacing the front scanner wire.

Reinstalling the Rear Scanner Wire



1. Position the center ball [A] in the middle of the forked holder.
2. Pass the left end (with the ball) [B] through the drive pulley notch. Pass the right end (with the ring) [C] through the drive pulley hole.
3. Wind the left end [B] clockwise (shown from the machine's front). Wind the right end [C] counterclockwise.

   Note

   - The two blue marks [D] come together when you do this. Attach the wire to the pulley with tape. This lets you easily handle the assembly at the time of installation.
4. Install the drive pulley on the shaft.

   Note

   - Do not attach the pulley on the shaft with the screw at this time.
5. Install the wire.

   Note

   - The winding of the wire on the three pulleys at the rear of the scanner should be the same as the winding on the three pulleys at the front. This must show as a mirror image.

   Example: At the front of the machine, the side of the drive pulley with the three windings must face the front of the machine. At the rear of the machine, it must face the rear.
6. Do steps 8 through 13 again in the "Reinstalling the Front Scanner Wire" Section.

4.6 LASER OPTICS

⚠WARNING

- Turn off the main power switch and unplug the machine before beginning any of the procedures in this section. Laser beams can cause serious eye injury.

4.6.1 CAUTION DECAL LOCATIONS

Caution decals are attached as shown below.

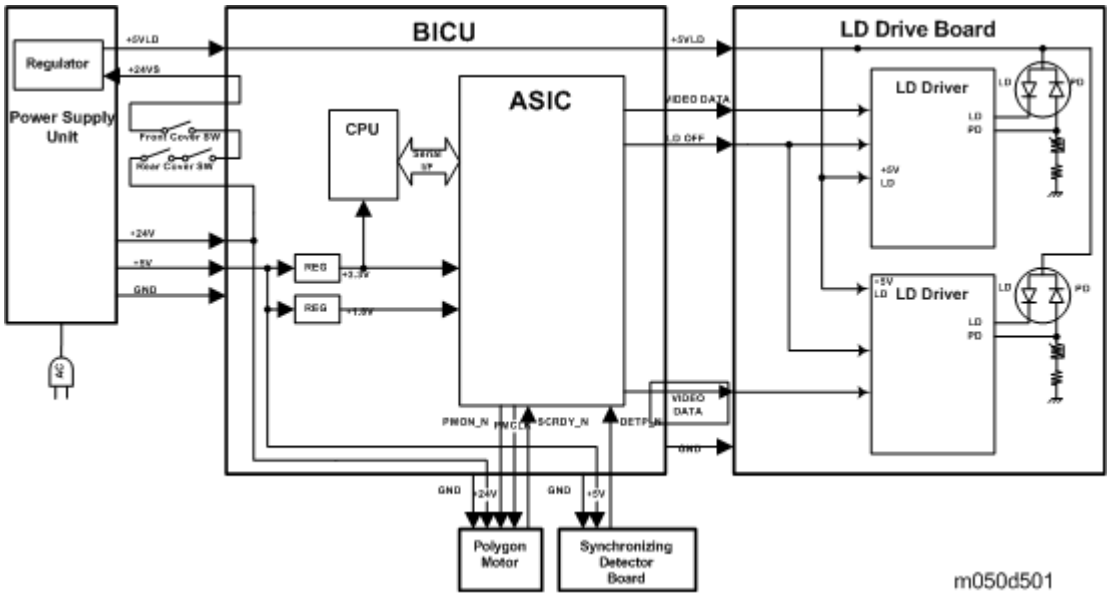
m050r500

⚠WARNING

- Be sure to turn off the main power switch and disconnect the power plug from the power outlet before beginning any disassembly or adjustment of the laser unit. This machine uses a class IIIb laser beam with a wavelength of 785 nm and an output of 6.2 mW. The laser can cause serious eye injury.

4.6.2 SAFETY SWITCHES FOR LASER UNIT

- Laser Exposure
- LD Safety Switch



A safety switch turns off when the front cover or the rear door is opened. As a result, the relay on the PSU cuts off the power supply (+5V) to the LD board. (The electric circuits go through the engine board) This system prevents unexpected laser emission, and ensures user safety and technician safety.

4.6.3 LASER UNIT

The removal procedure of the "Preparation before Removing the Laser Unit" differs depending on the models. Refer to the target model under the "Preparation before Removing the Laser Unit".

Preparation before Removing the Laser Unit

For M052 models

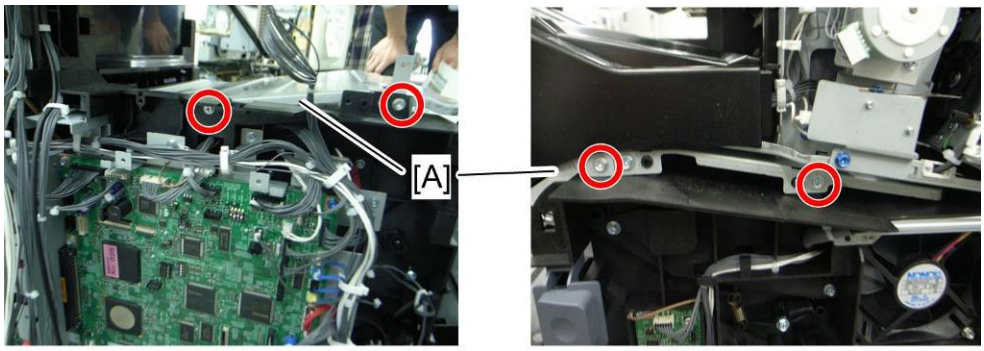
1. Output tray (☛p.4-21)

For M053 models

1. 1 bin tray unit (☛p.4-126).
2. Output tray (☛p.4-21)

For M054 model

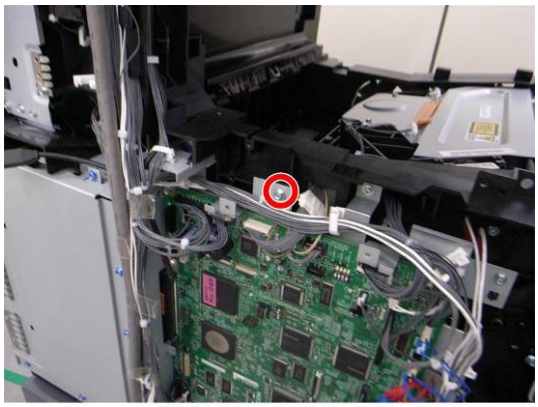
1. Internal finisher (☛p.4-104)



m050r524

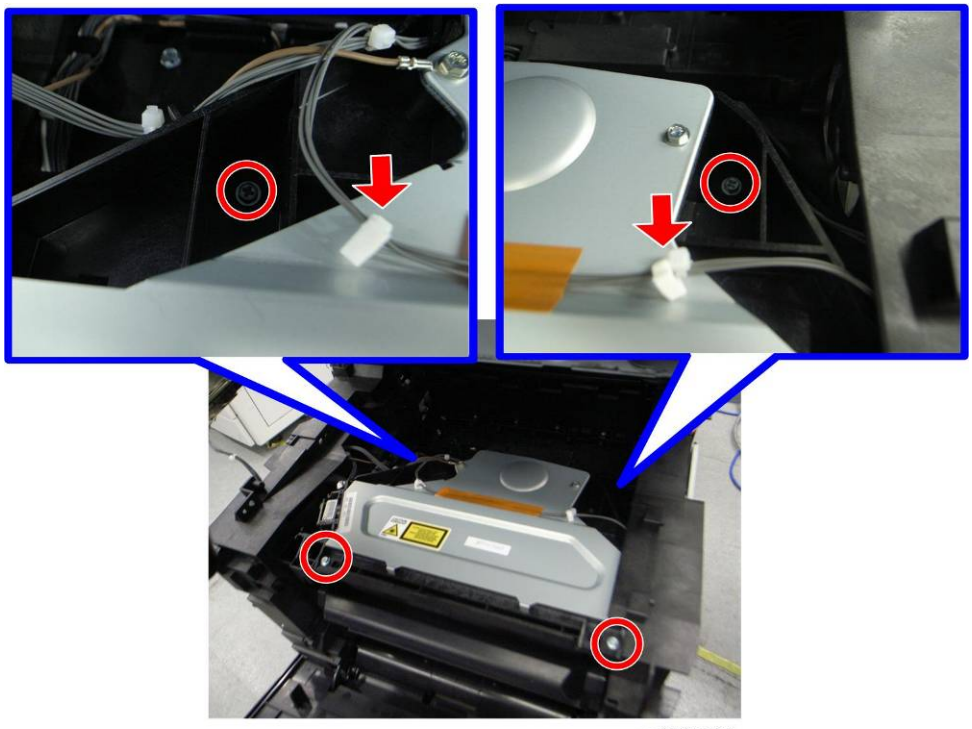
2. Finisher stay [A] (x 4)

Removing the Laser Unit for All Models



m050r525

1. Remove the two ground cables (x 1).

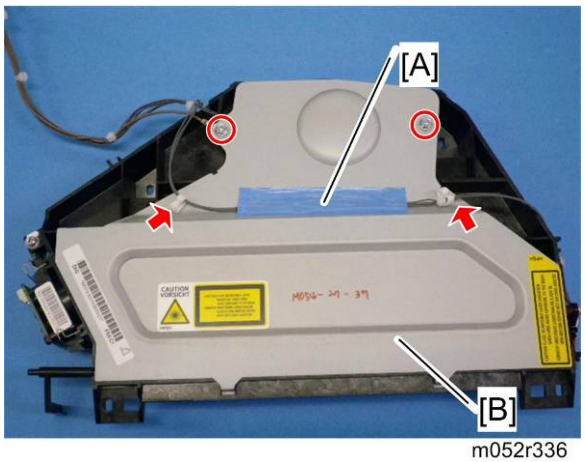


m050r526

2. Laser unit (x 4, x 2, x 2)

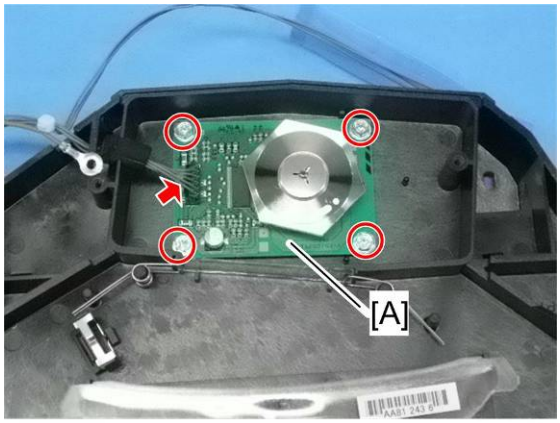
4.6.4 POLYGON MOTOR

1. Laser unit (☛p.4-41)



m052r336

2. Remove the tape [A] on the laser unit cover.
   - Keep this tape. This tape is necessary when reassembling the laser unit.
3. Laser unit cover [B] (x 1, x 2, ground cable x 1)

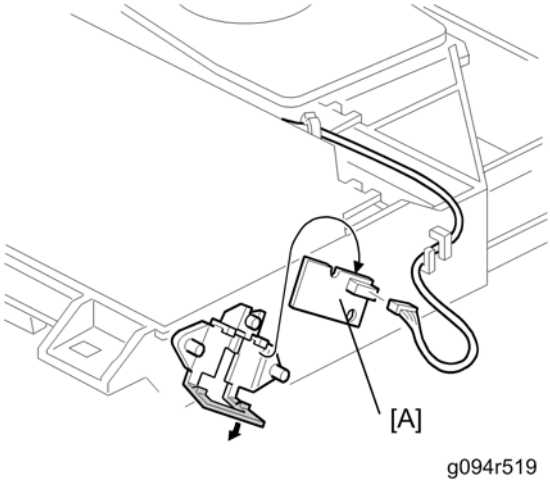


m052r337

4. Polygon motor [A] (x 4, x 1)

4.6.5 LASER SYNCHRONIZATION DETECTOR

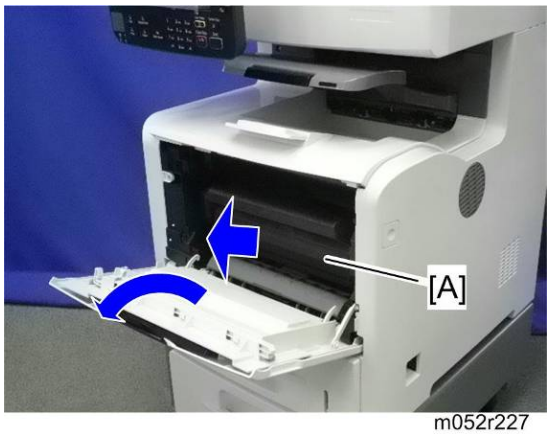
1. Laser unit (☛p.4-41)



2. Laser synchronization detector [A] (☞ x 1)

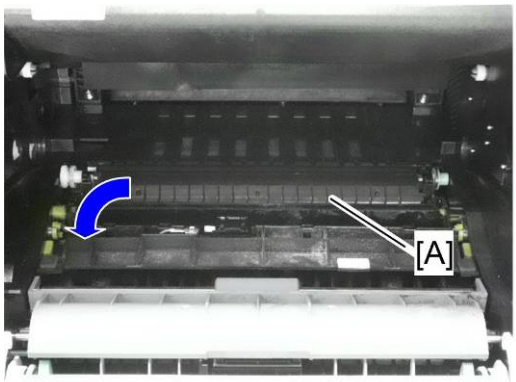
4.7 PAPER TRANSFER

4.7.1 TRANSFER ROLLER



m052r227

1. Open the front door.
2. AIO [A]



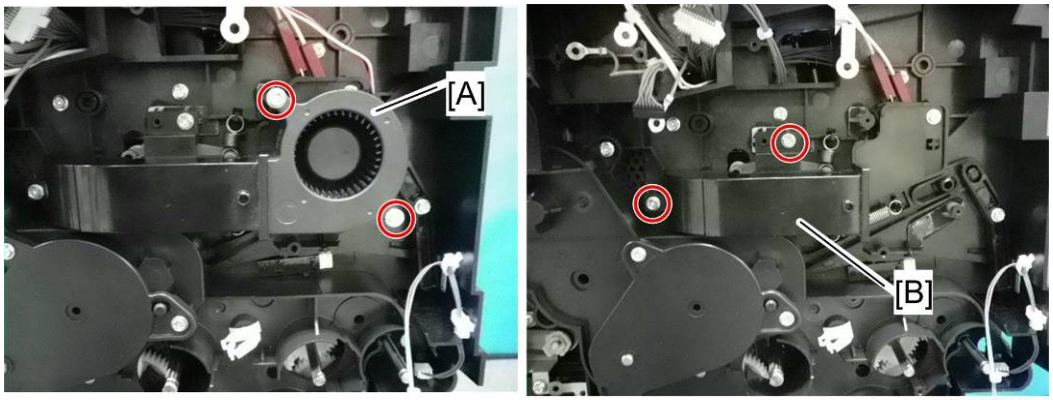
m052r228

3. Pull the transfer roller holder [A].
4. Transfer roller [B]

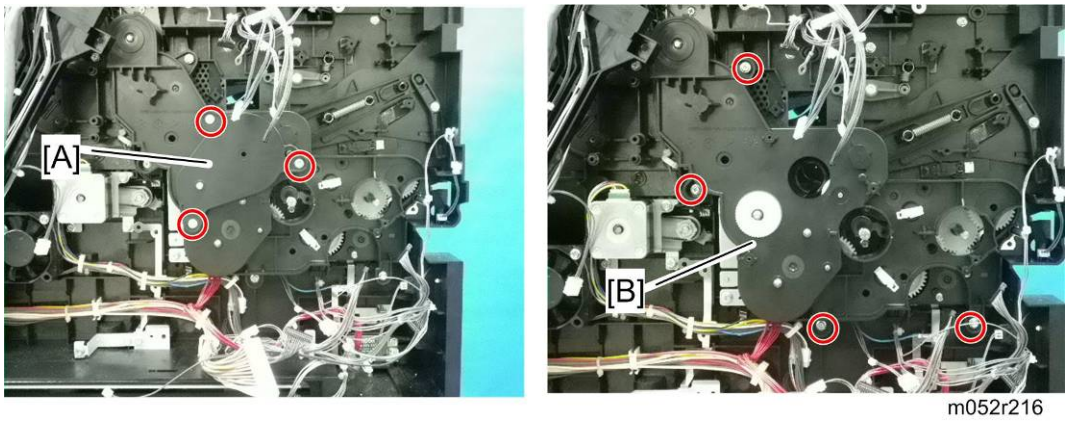
4.8 DRIVE SECTION

4.8.1 GEARBOX

1. Left cover (☛p.4-11)
2. BICU bracket (☛p.4-81)



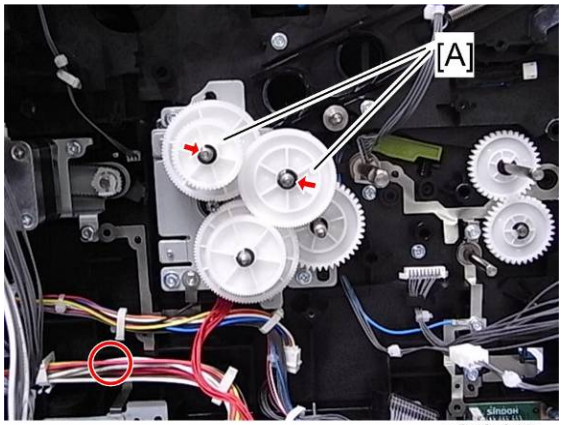
3. AIO fan [A] (x 2, x 1)
4. AIO fan duct [B] (x 2)



5. Gearbox cover [A] (x 3)
   - Hold the gearbox cover [A] while removing it. Otherwise, the spring inside the gearbox cover suddenly comes off.
6. Gearbox [B] (x 3)
   - Hold the gearbox [B] while removing it. Otherwise, the spring inside the gearbox suddenly comes off.

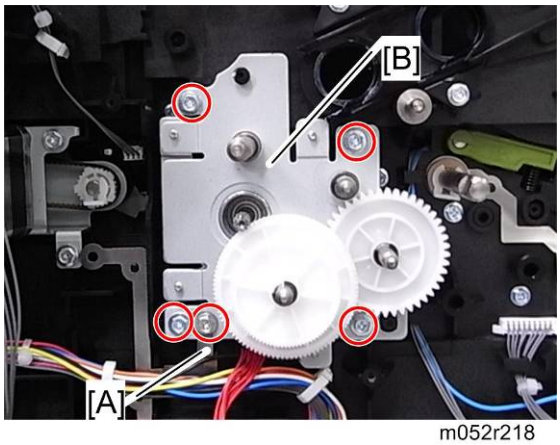
4.8.2 MAIN MOTOR

1. Gearbox (☛p.4-46)



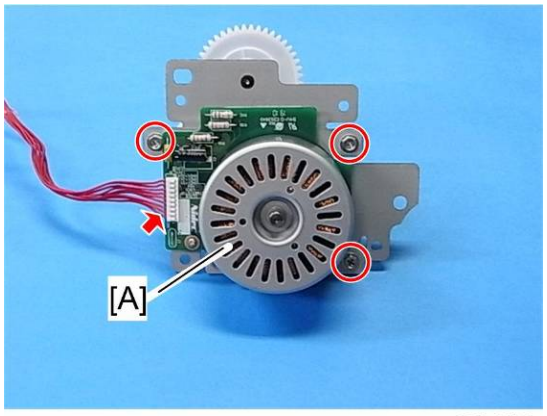
m052r217

2. Drive gears [A] (x 1 each)



m052r218

3. Ground plate [A] (x 1)
4. Main motor bracket [B] (x 4)

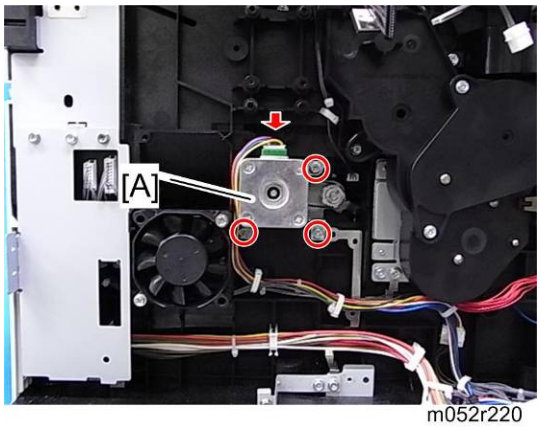


m052r219

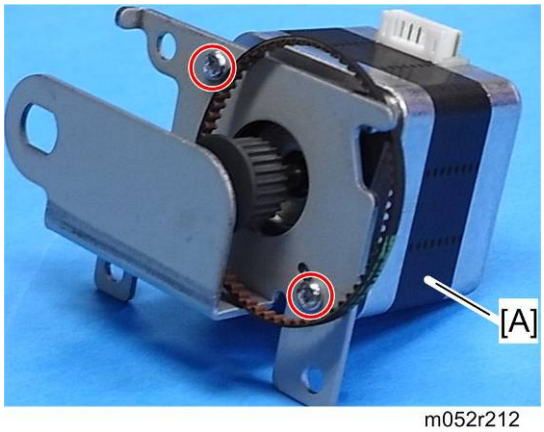
5. Main motor [A] (x 1)

4.8.3 DUPLEX MOTOR

1. BICU bracket (☛p.4-81)



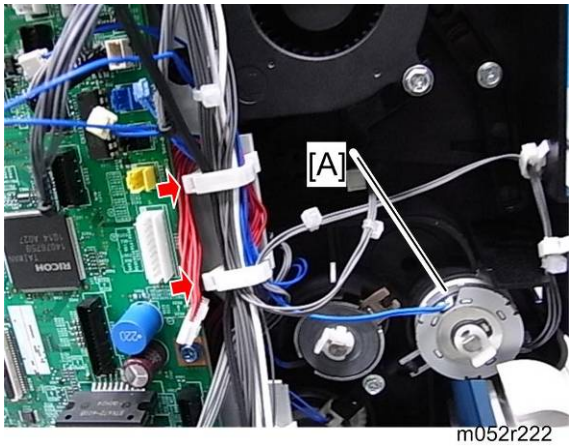
2. Duplex motor bracket (x 3, x 1)



3. Duplex motor [A] (x 2, timing belt x 1)

4.8.4 BY-PASS FEED CLUTCH

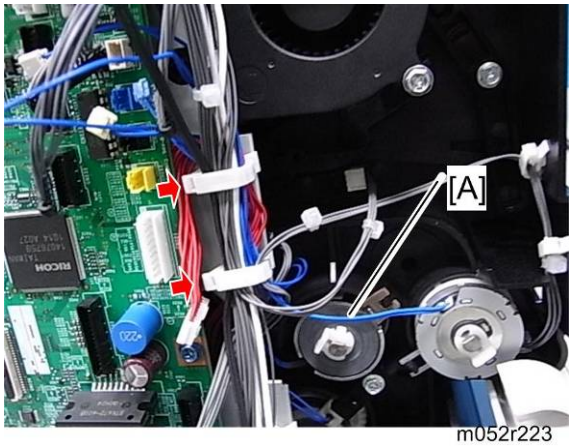
1. Left cover (☛p.4-11)



2. By-pass feed clutch [A] (x 1, x 1, x 1)

4.8.5 RELAY CLUTCH

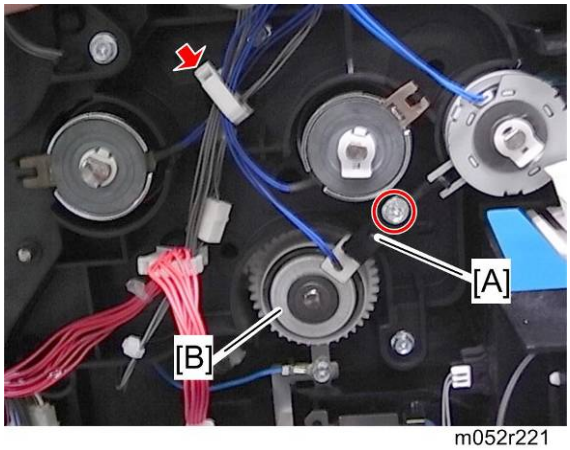
1. Left cover (☛p.4-11)



1. By-pass feed clutch [A] (x 1, x 1, x 1)

4.8.6 PAPER FEED CLUTCH

1. BICU bracket (☛p.4-81)

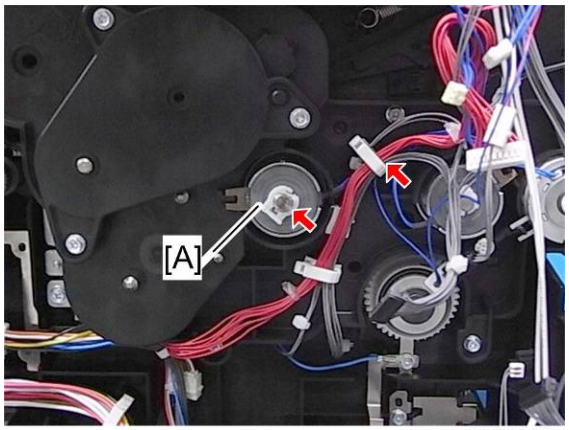


m052r221

2. Clutch holder [A] (x 1)
3. Paper feed clutch [B] (x 1)

4.8.7 REGISTRATION CLUTCH

1. BICU bracket (☛p.4-81)



m052r271

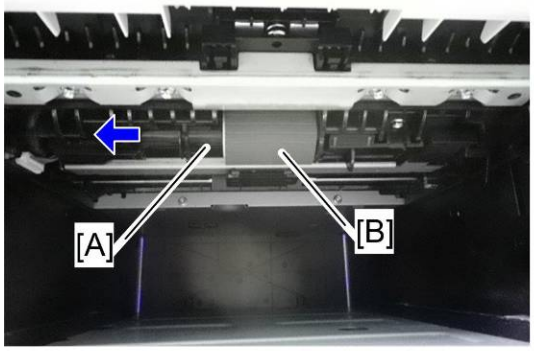
2. Registration clutch [A] (x 1, x 1)

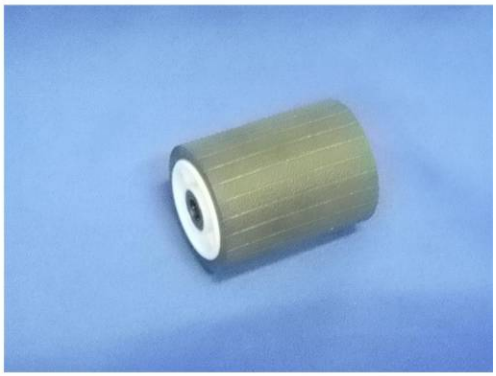
4.9 PAPER FEED

4.9.1 PAPER FEED ROLLER

m052r331

1. Pull out the tray 1 [A].



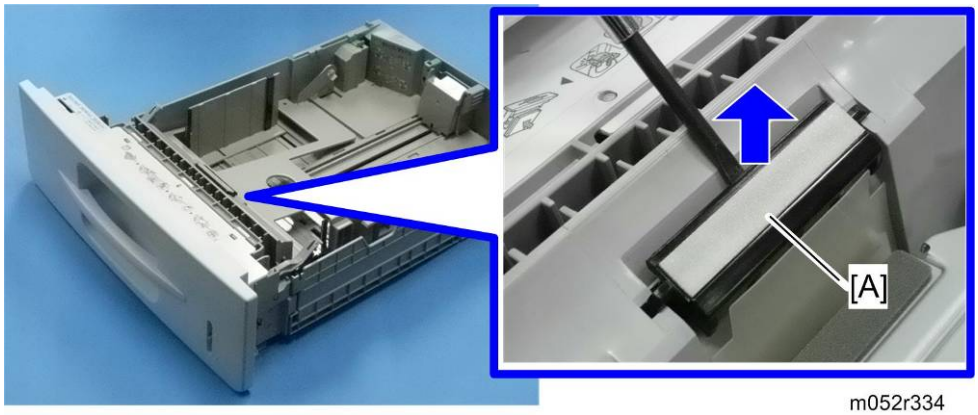


m052r229

2. Slide the paper feed roller shaft to the left.
3. Paper feed roller [B]

4.9.2 FRICTION PAD

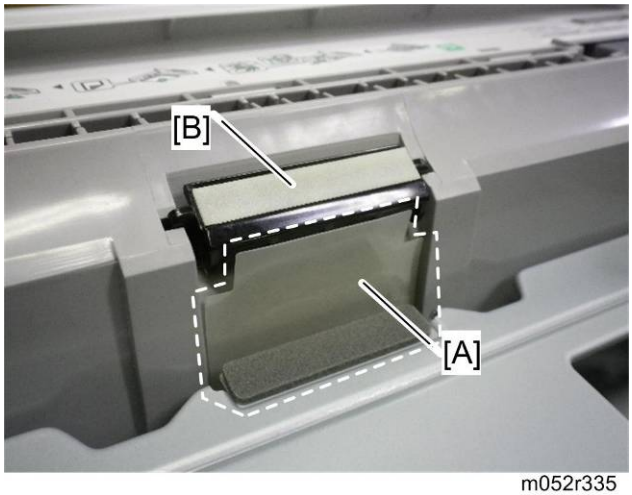
1. Pull out the tray 1.



m052r334

2. Friction pad [A] (hooks, spring x 1)

When reassembling the friction pad

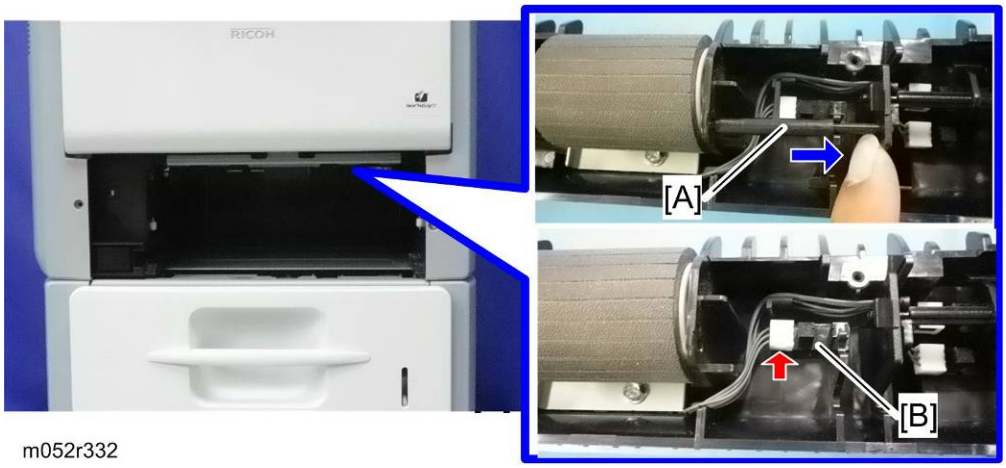


m052r335

When reinstalling the friction pad, make sure that the mylar [A] is placed outside the friction pad.

4.9.3 PAPER END SENSOR

1. Pull out the tray 1.



m052r332

2. Filler [A] for the paper end sensor
3. Paper end sensor [B] (hooks, x 1)

4.9.4 REMAINING PAPER SENSORS

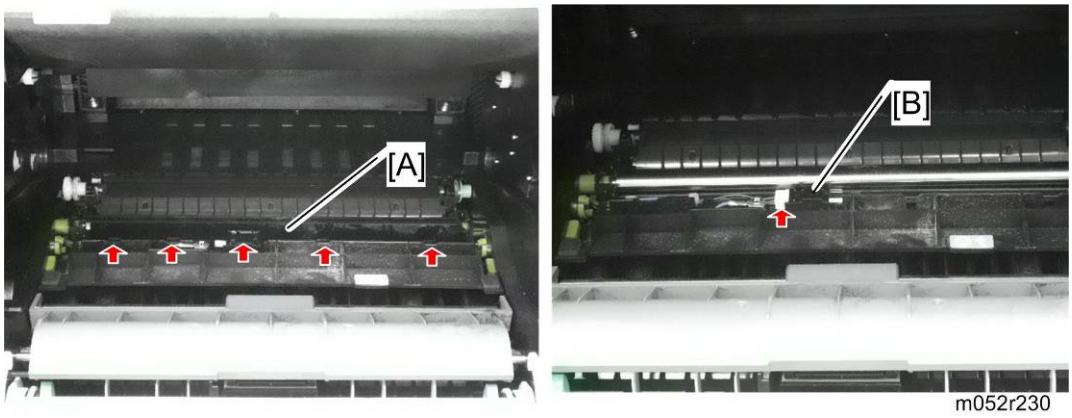
1. Pull out the tray 1.

m052r333

2. Filler [A] for the remaining paper sensors
3. Remaining paper sensors [B] (hooks, x 1 each)

4.9.5 REGISTRATION SENSOR

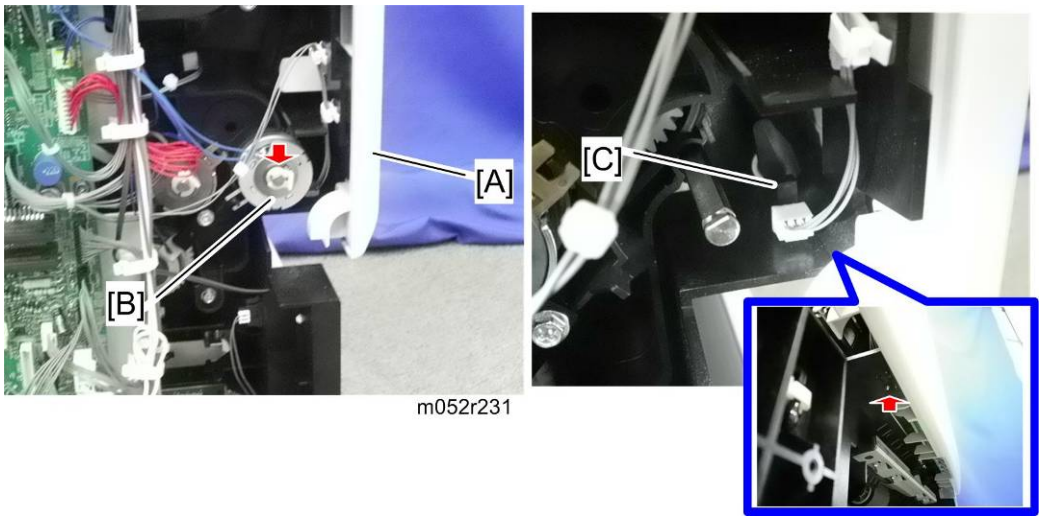
1. AIO (☛p.4-45 "Transfer Roller")



1. Registration roller guide cover [A] (hooks)
2. Registration sensor [B] (☞ x 1)

4.9.6 BY-PASS PAPER SENSOR

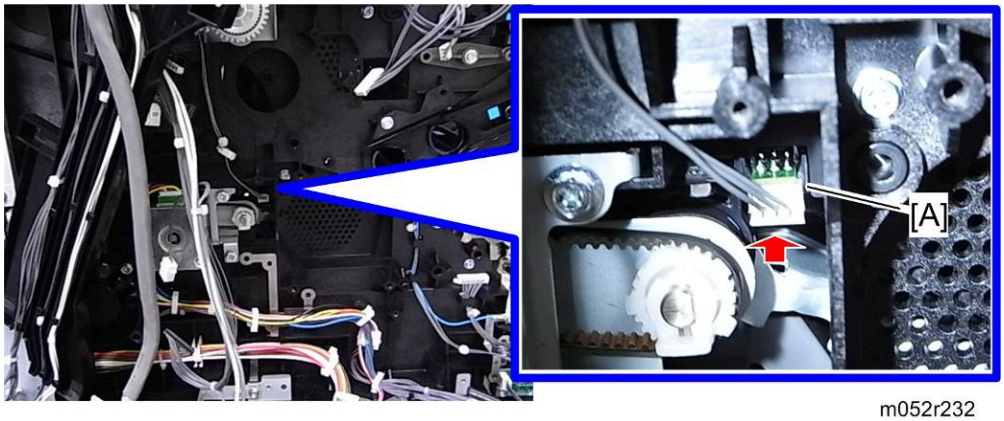
1. Left cover (☛p.4-11)



2. Close the front door [A].
3. By-pass feed clutch [B] (⟲ x 1)
4. By-pass paper sensor [C] (hooks, ☞ x 1)

4.9.7 DUPLEX RELAY SENSOR

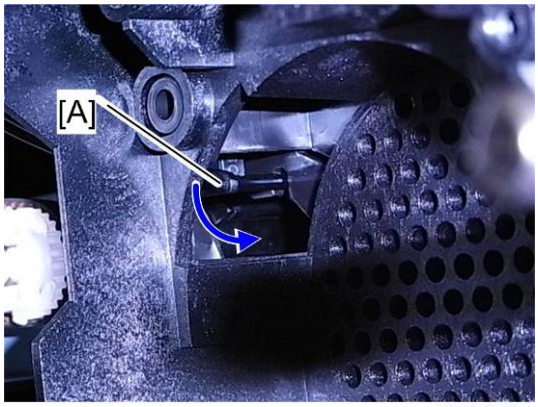
1. BICU bracket (☛p.4-81)
2. Main motor (☛p.4-47)



m052r232

3. Duplex relay sensor [A] (hooks, x 1)

When reassembling the duplex relay sensor

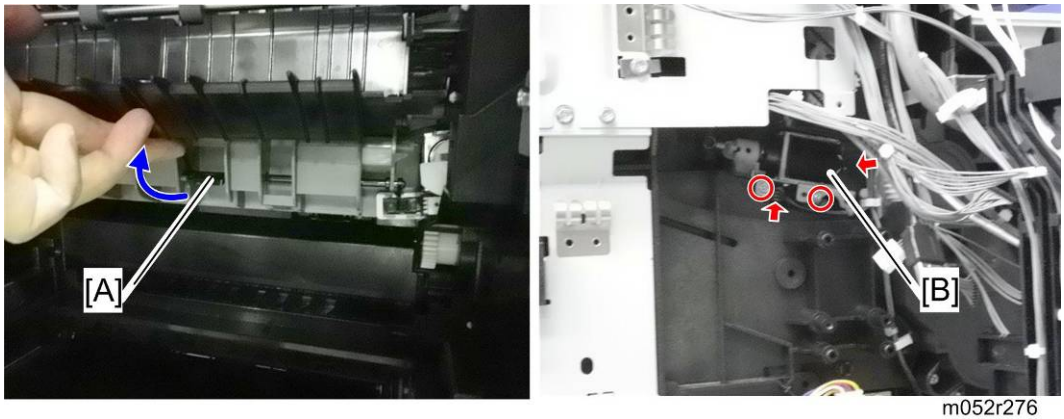


m052r272

Keep the duplex relay sensor filler [A] downward with a thin tool when installing the duplex relay sensor. Otherwise, the sensor filler interrupts the duplex relay sensor installation.

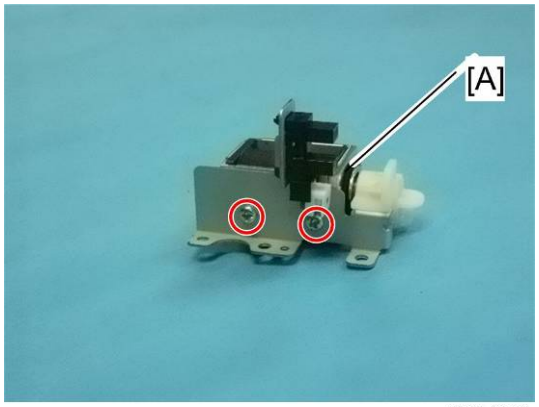
4.9.8 JUNCTION GATE 1 SOLENOID

1. Open the duplex unit.
2. Left cover (☛p.4-11)
3. BICU bracket (☛p.4-81)



m052r276

4. Lift up the filler [A] of the fusing exit sensor when removing the junction gate 1 bracket.
5. Junction gate 1 solenoid bracket [B] (x 2, x 2, spring x 1)

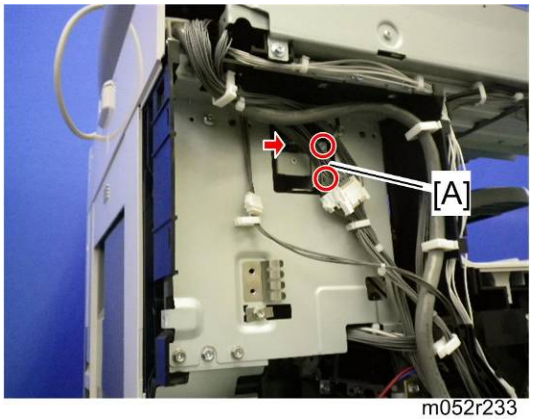


m052r277

6. Junction gate 1 solenoid [A] (x 2)

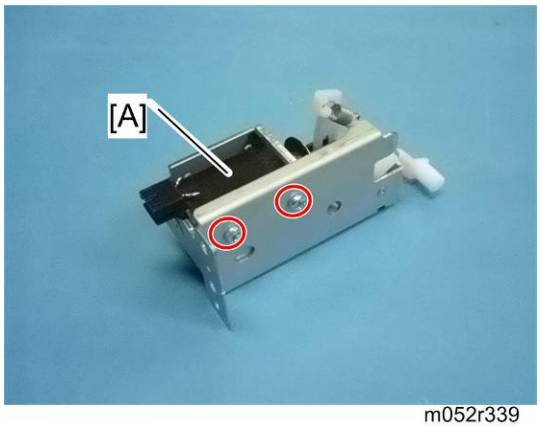
4.9.9 JUNCTION GATE 2 SOLENOID

1. Left cover (☛p.4-11)



m052r233

2. Junction gate 2 solenoid bracket [A] (x 1, x 2)

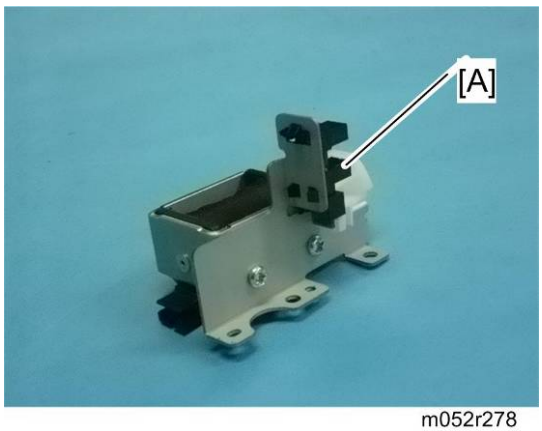


m052r339

3. Junction gate 2 solenoid [A]

4.9.10 FUSING EXIT SENSOR (M053 MODEL ONLY)

1. Left cover (☛p.4-11)
2. BICU bracket (☛p.4-81)
3. Junction gate 1 solenoid bracket (☛p.4-56 "Junction Gate 1 Solenoid")

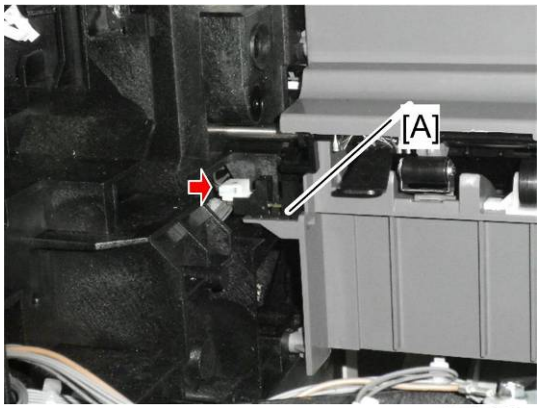


m052r278

4. Fusing exit sensor [A]

4.9.11 PAPER OVERFLOW SENSOR (M052/M053 MODELS ONLY)

1. Output tray (☛p.4-21)



m052r279

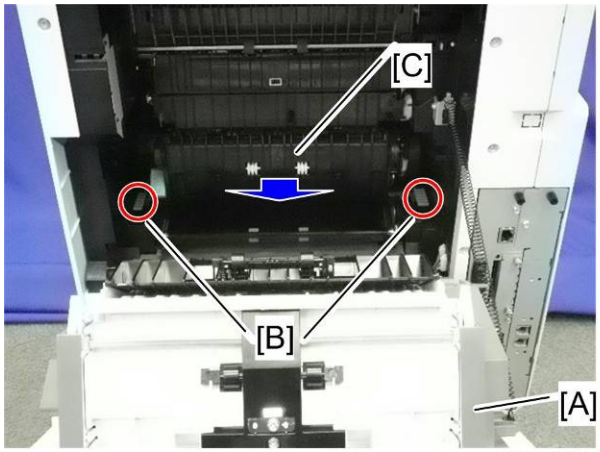
2. Paper overflow sensor [A] (hooks, x 1)

4.10 FUSING

4.10.1 FUSING UNIT

⚠CAUTION

- Before handling the fusing unit, make sure that the unit is cool enough. The fusing unit can be very hot.

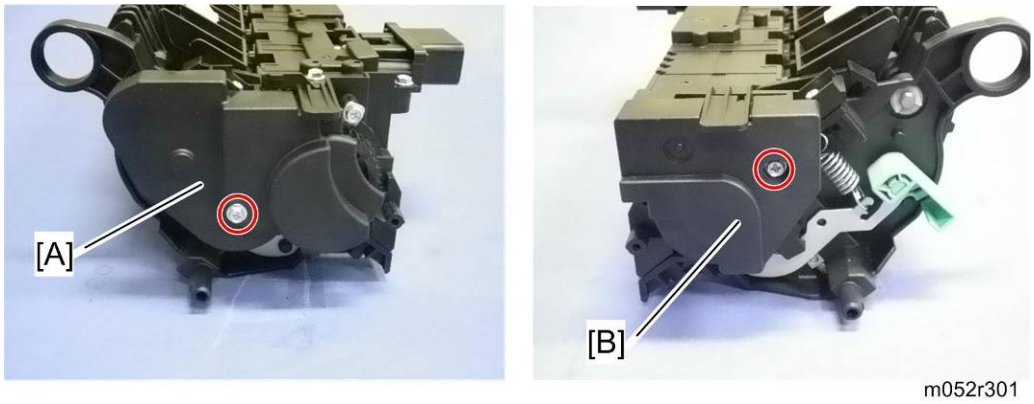


m052r300

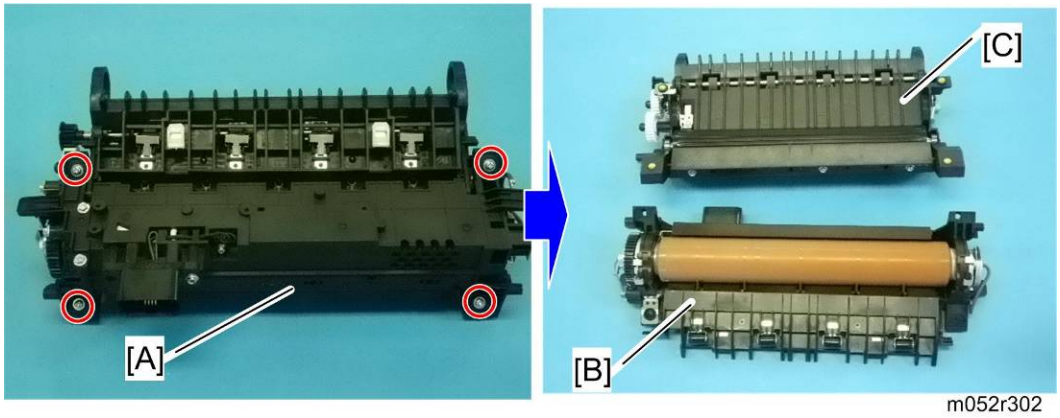
1. Open the duplex unit.
2. Release the lock levers.
3. Fusing unit.

4.10.2 HOT ROLLER AND PRESSURE ROLLER SECTIONS

1. Fusing unit (☛ p.4-59)



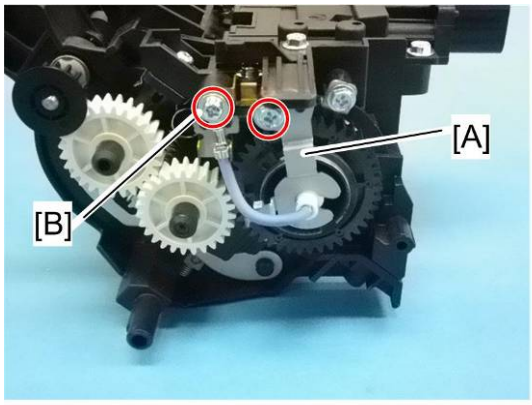
2. Fusing left cover [A] (x 1)
3. Fusing right cover [B] (x 1)

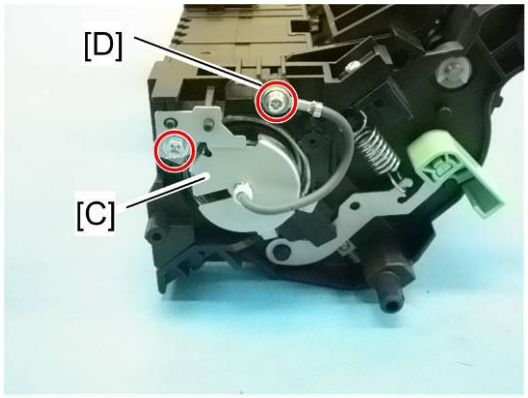


4. Separate the fusing unit [A] into two sections (x 4): the hot roller section [B] and the pressure roller section [C]

4.10.3 FUSING LAMP

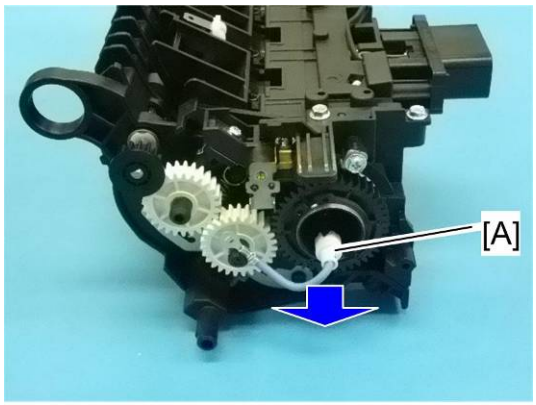
1. Fusing unit (☛p.4-59)
2. Fusing left and right covers (☛p.4-60 "Hot Roller and Pressure Roller Sections")





m052r303

3. Lamp left stay [A] (x 1)
4. Remove the screw [B] on the left terminal of the fusing unit.
5. Lamp right stay [C] (x 1)
6. Remove the screw [D] on the right terminal of the fusing unit.



m052r304

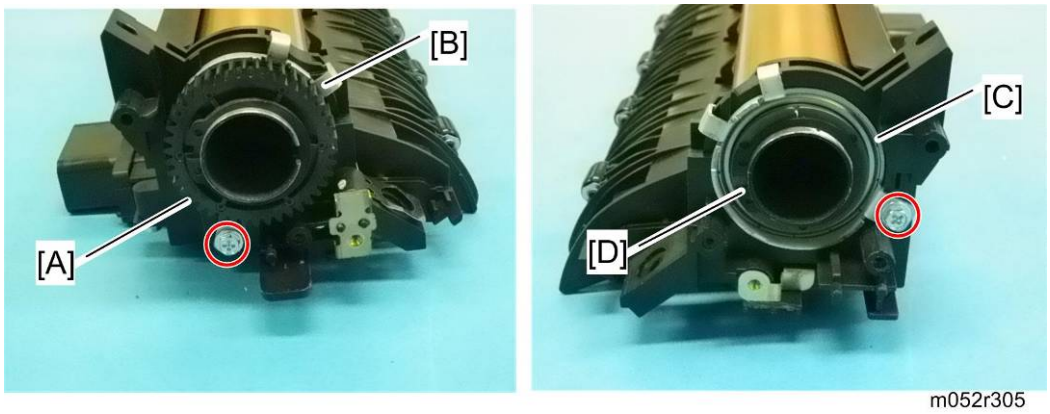
7. Fusing lamp [A]

4.10.4 HOT ROLLER

CAUTION

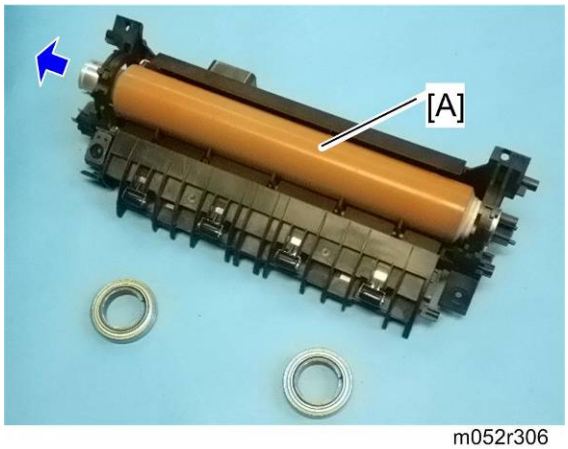
- Do not touch the fusing lamp and rollers with your bare hands.

1. Hot roller section (☛p.4-60 "Hot Roller and Pressure Roller Sections")
2. Fusing lamp (☛p.4-61)



m052r305

3. Hot roller gear [A] (c-ring x 1)
4. Hot roller left stay [B] (x 1)
5. Hot roller right stay [C] (x 1)
6. Remove the c-ring [D].

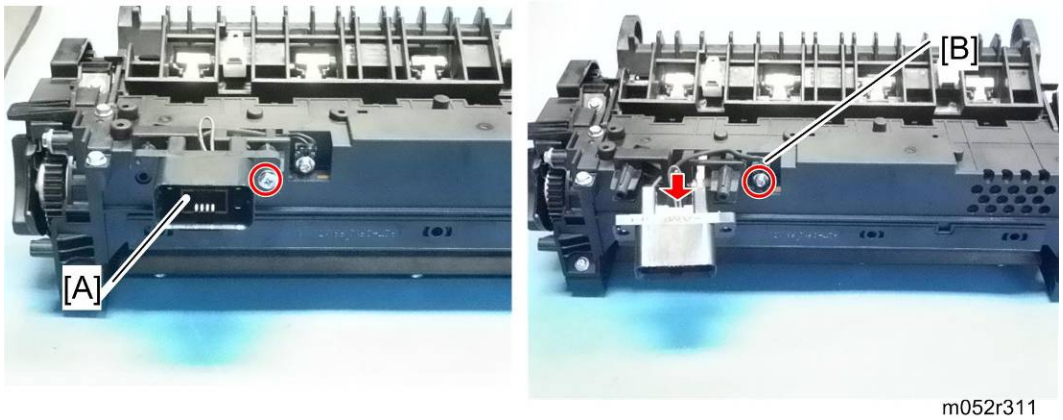


m052r306

7. Hot roller [A] (bearing x 2, insulator x 2)
   - Slowly pull out the hot roller from the hot roller section not to damage the hot roller due to the five stripper pawls on the hot roller section.

4.10.5 FUSING THERMISTOR

1. Fusing unit (☛ p.4-59)

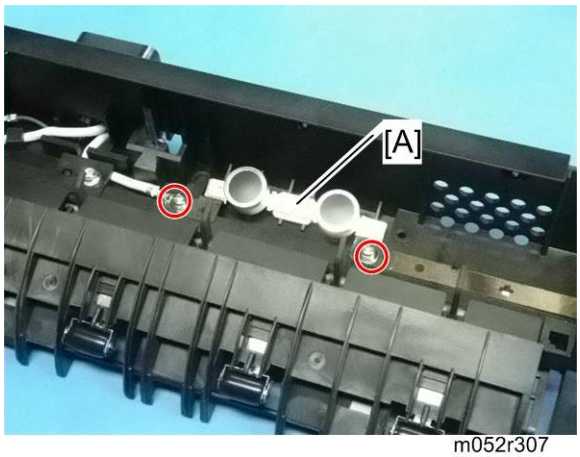


m052r311

2. Fusing drawer connector [A] (x 1)
3. Fusing thermistor [B] (x 1, x 1)

4.10.6 THERMOSTATS

1. Hot roller (☛ p.4-62)



m052r307

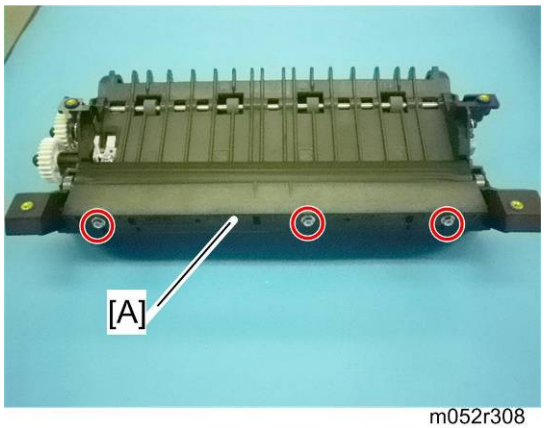
2. Thermostats [A] (x 2)

⚠CAUTION

- Do not recycle thermostats that are already opened. Safety is not guaranteed if you do this.

4.10.7 PRESSURE ROLLER

1. Pressure roller section (☛ p.4-60 "Hot Roller and Pressure Roller Sections")



m052r308

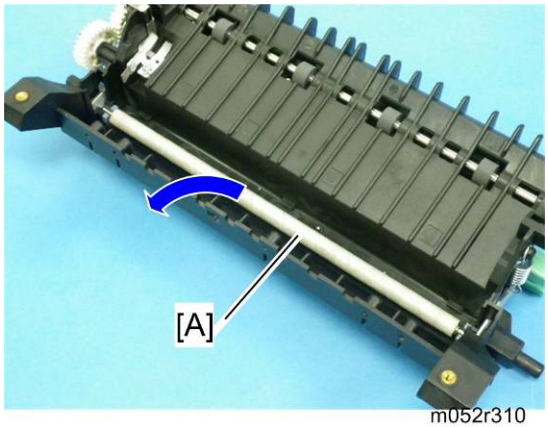
2. Fusing entrance guide [A] (x 3)

m052r309

3. Pressure roller [A] (bearing x 2)

4.10.8 FUSING CLEANING ROLLER

1. Pressure roller section (☛ p.4-60)
2. Pressure roller (☛p.4-64r)

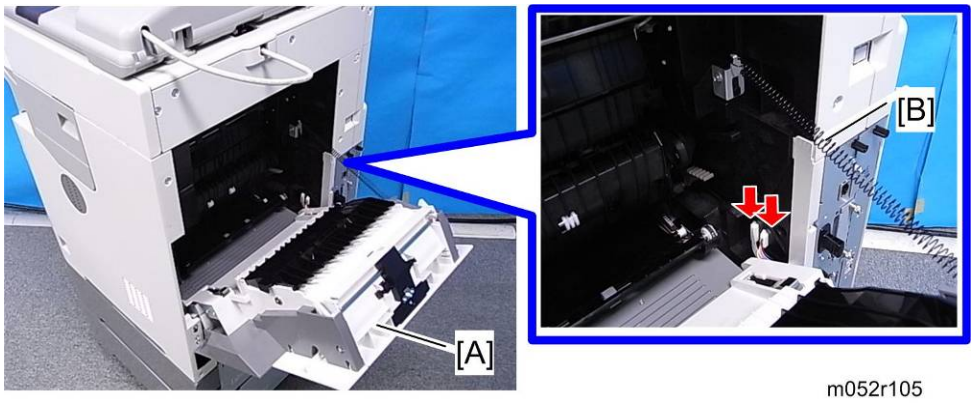


m052r310

3. Fusing cleaning roller [A]

4.11 DUPLEX UNIT

4.11.1 DUPLEX UNIT



m052r105

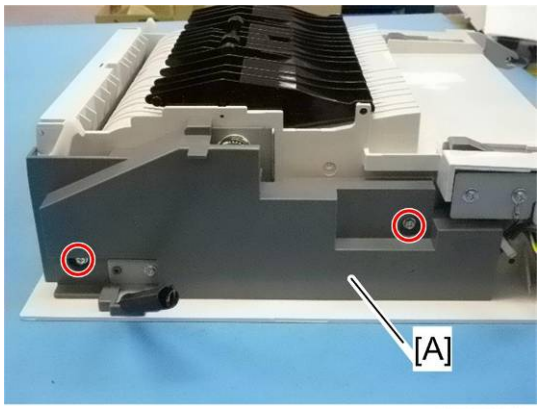
1. Open the duplex unit [A].
2. Release the spring [B] and two harnesses of the duplex unit.

m052r106

3. Duplex unit [A]

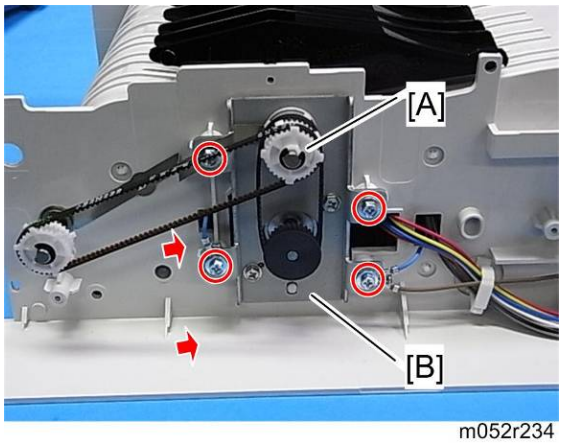
4.11.2 DUPLEX INVERTER MOTOR

1. Duplex unit (☛p.4-65)



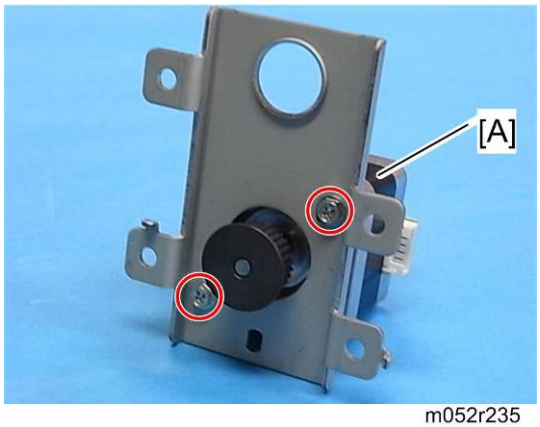
m052r236

2. Duplex left cover [A] (x 2)



m052r234

3. Gear [A] (x 1, timing belt x 2)
4. Duplex inverter motor bracket [B] (x 4, x 1)
   - Two of these screws secure the ground cables (blue and gray cords).

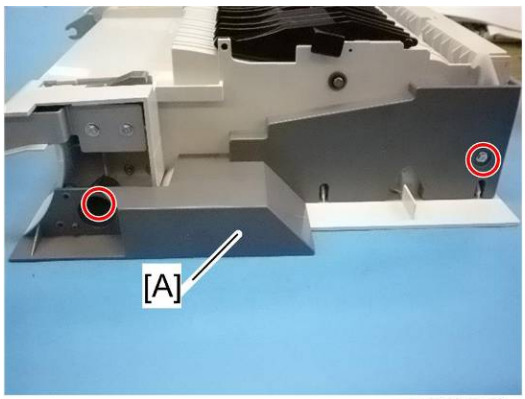


m052r235

5. Duplex inverter motor [A] (x 2)

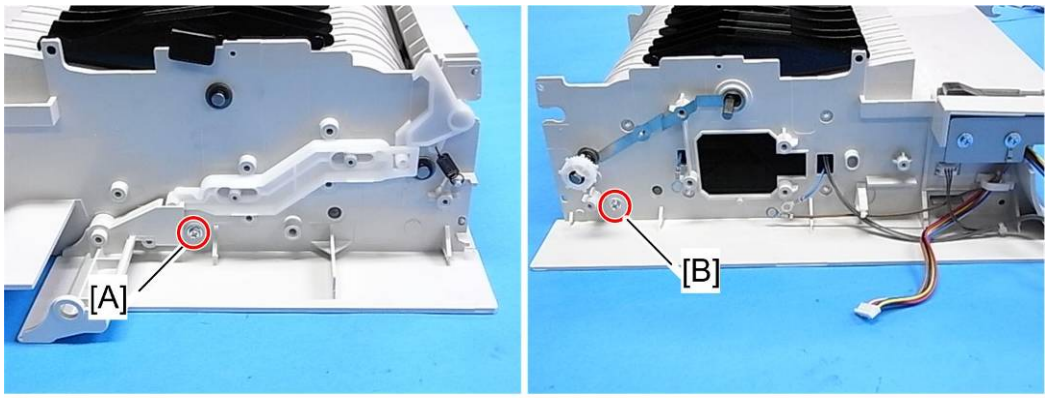
4.11.3 DUPLEX EXHAUST FAN

1. Duplex unit (☛p.4-65)
2. Duplex left cover (☛p.4-66 "Duplex Inverter Motor")



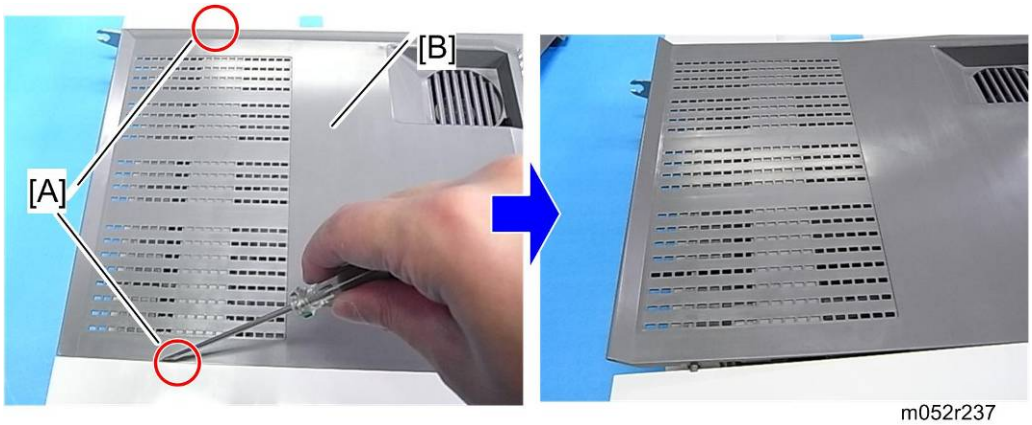
m052r273

3. Duplex right cover [A] (x 2)



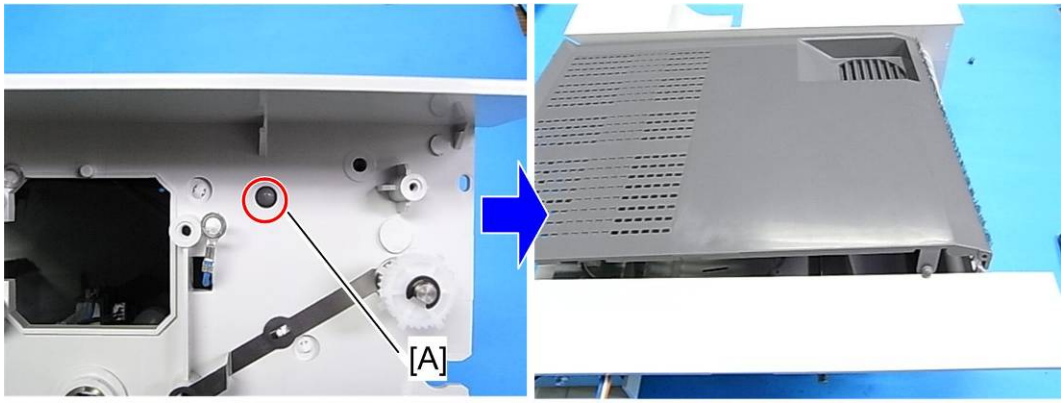
m052r274

4. Remove screw [A] on the left of the duplex unit and screw [B] on the right of the duplex unit.



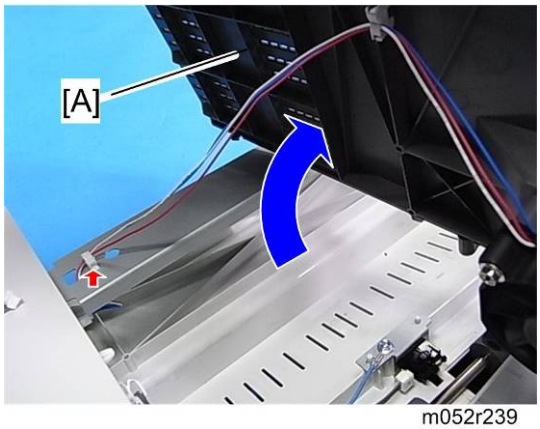
m052r237

5. Release the two bosses [A] of the duplex rear cover [B].



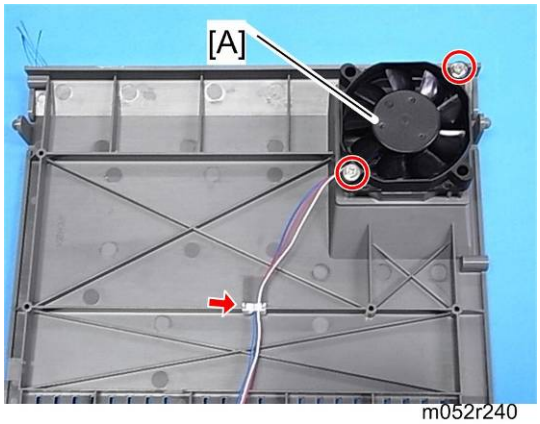
m052r238

6. Release the boss [A] on the left side.



m052r239

7. Slowly turn over the duplex rear cover [A], and then remove it (x 1).

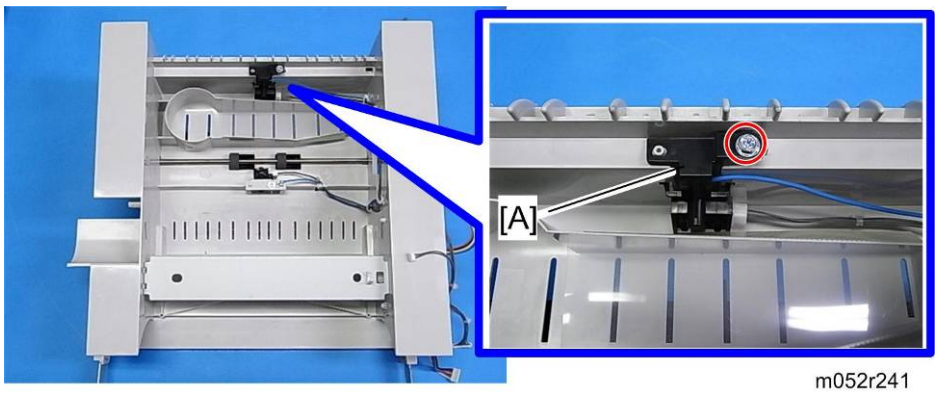


m052r240

8. Duplex exhaust fan [A] (x 2, x 1).

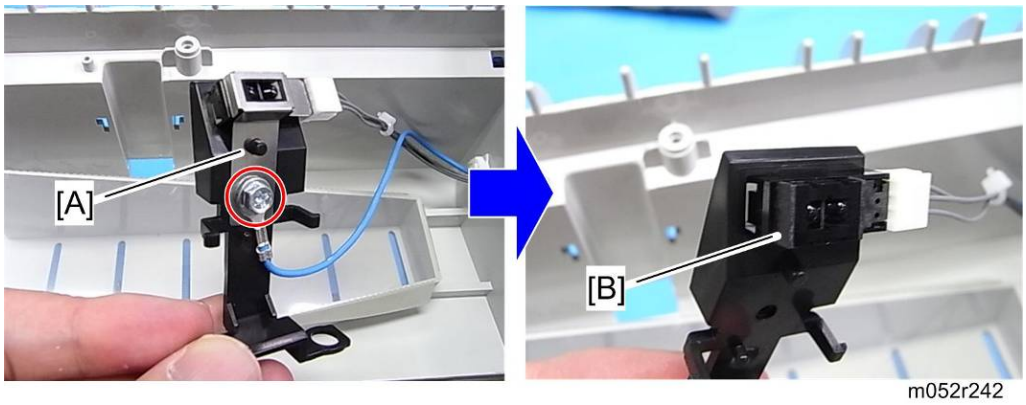
4.11.4 DUPLEX INVERTER SENSOR

1. Duplex unit (☛p.4-65)
2. Duplex rear cover (☛p.4-67 "Duplex Exhaust Fan")



m052r241

1. Sensor holder [A] (x 1)

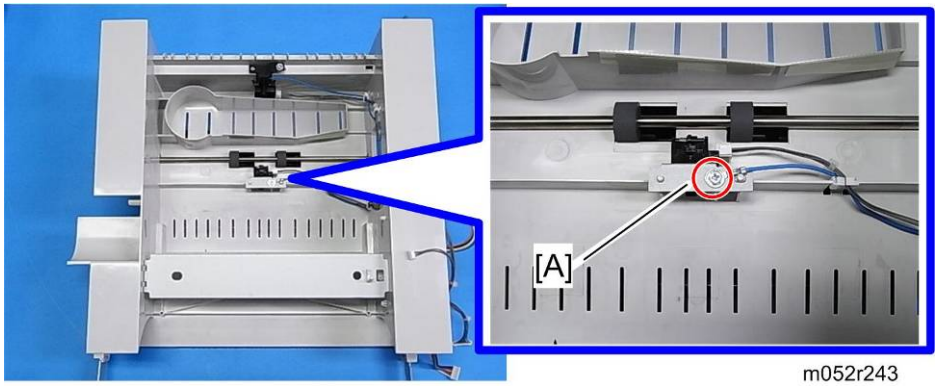


m052r242

2. Ground plate [A] (x 1)
3. Duplex inverter sensor [B] (hooks, x 1)

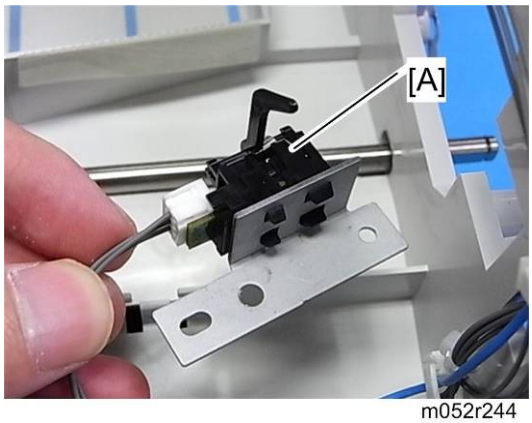
4.11.5 DUPLEX ENTRANCE SENSOR

1. Duplex unit (☛p.4-65)
2. Duplex rear cover (☛p.4-67 "Duplex Exhaust Fan")



m052r243

3. Duplex entrance sensor bracket [A] (x 1)

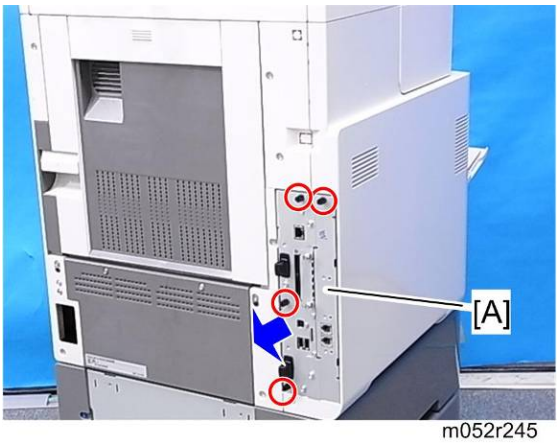


m052r244

4. Duplex entrance sensor [A] (hooks, x 1)

4.12 ELECTRICAL COMPONENTS

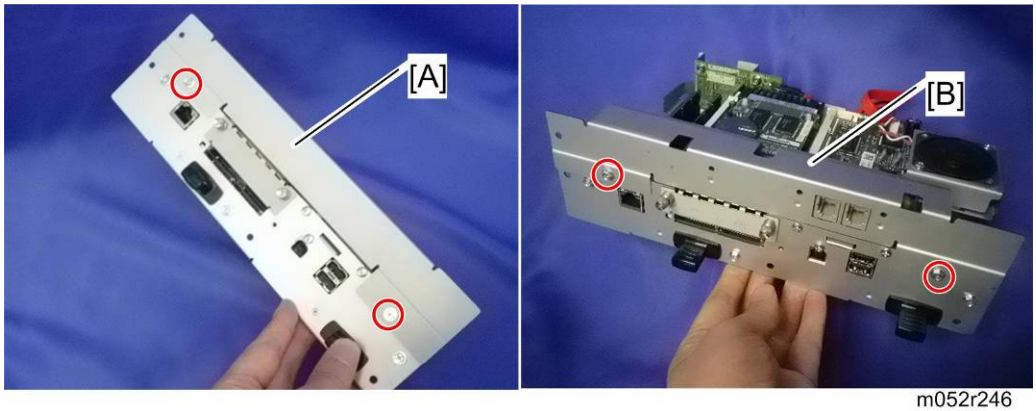
4.12.1 CONTROLLER UNIT



1. Controller unit [A] (x 4)

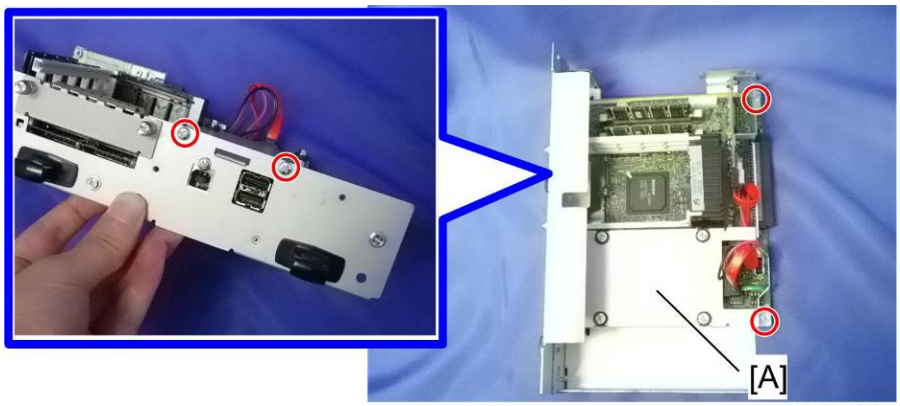
4.12.2 HDD UNIT

1. Controller unit (☛p.4-71)



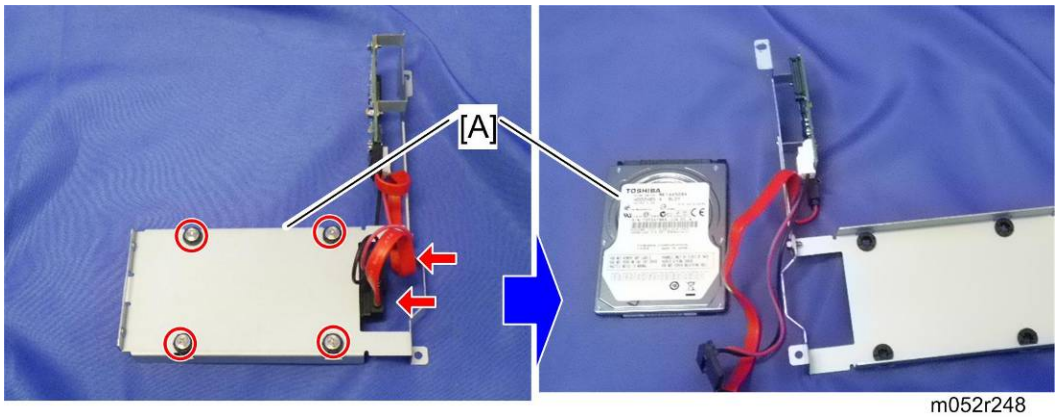
m052r246

2. Fax slot bracket [A] (x 2) or fax unit [B] if it has been installed (x 2)



m052r247

3. HDD unit bracket [A] (x 4)

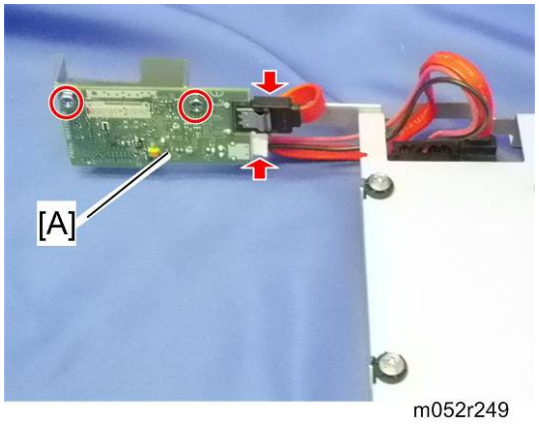


m052r248

4. HDD unit [A] (x 4, x 2)

4.12.3 HDD CONTROL BOARD

1. Controller unit (☛p.4-71)
2. HDD unit bracket (☛p.4-72 "HDD Unit")

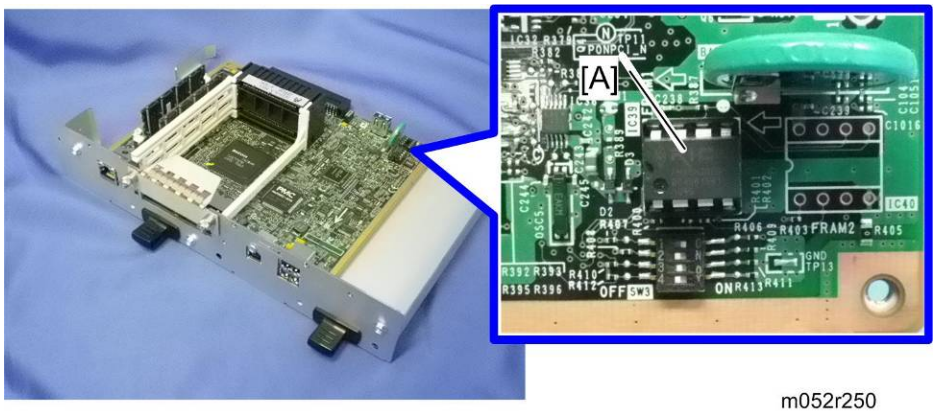


m052r249

3. HDD control board (x 2, x 2)

4.12.4 NVRAM

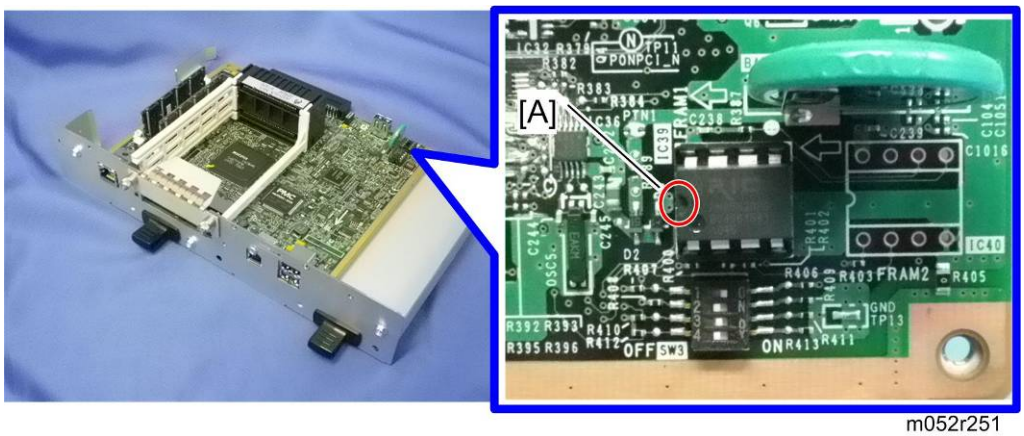
1. Controller unit (☛p.4-71)
2. HDD unit bracket (☛p.4-72 "HDD Unit")



m052r250

3. NVRAM [A]

When reinstalling a new NVRAM



m052r251

Make sure that you have the SMC report (factory settings). This report comes with the machine.

1. Print the SMC data (”ALL”) using SP5-990-001.
2. Turn off the main switch.
3. Remove the VM card from SD card Slot 2 (Lower).
4. Insert a blank SD card into Slot 2 (Lower), and then turn on the main power switch.
5. Upload the NVRAM data to the blank SD card using SP5-824-001 (NVRAM Data Upload).
6. Turn off the main power switch, and then unplug the AC power cord.
7. Remove the SD Card containing the NVRAM data from Slot 2 (Lower).
8. Replace the NVRAM on the Controller Board with a new one.
9. Plug in the AC power cord, and then turn on the main power switch

   Important

   - When you do this, SC995-02 (Defective NVRAM) will be displayed. However, do not turn off the main power switch. Continue this procedure.
10. Re-insert the SD card that you removed in Step 7 back into Slot 2 (Lower)
11. Download the old NVRAM data from the SD card onto the new NVRAMs using SP5-825-001 (NVRAM Data Download).

    Note

    - This will take about 2 or 3 minutes.
12. Turn off the main power switch, and then remove the SD card from Slot 2 (Lower).
13. Insert the VM card into Slot 2 (Lower).
14. Turn on the main power switch.
15. Print the SMC data (”ALL”) using SP5-990-001, and make sure that it matches the SMC data you printed out in Step 1 above (except for the value of the total counter).

Note

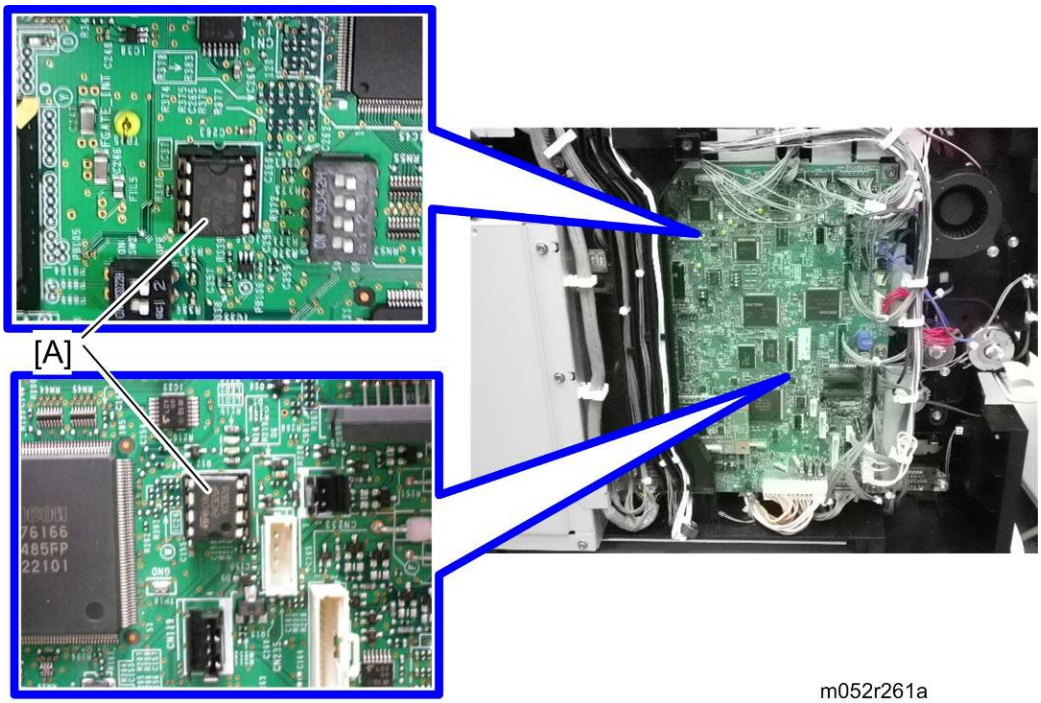
- The value of the total counter is reset to “0” when the NVRAM is replaced.

Important

- Do all of the following if SP5-824-001 (NVRAM Data Upload) and SP5-825-001 (NVRAM Data Download) cannot be performed for some reason:
- 1. Replace the NVRAM and Security SD card together as a set with new ones.
- 2. Manually enter all data on the SMC report (factory settings).
- 3. Install the new Security SD card functions (Data overwrite and HDD encryption) again. See RTB #RGene039 for the procedure.

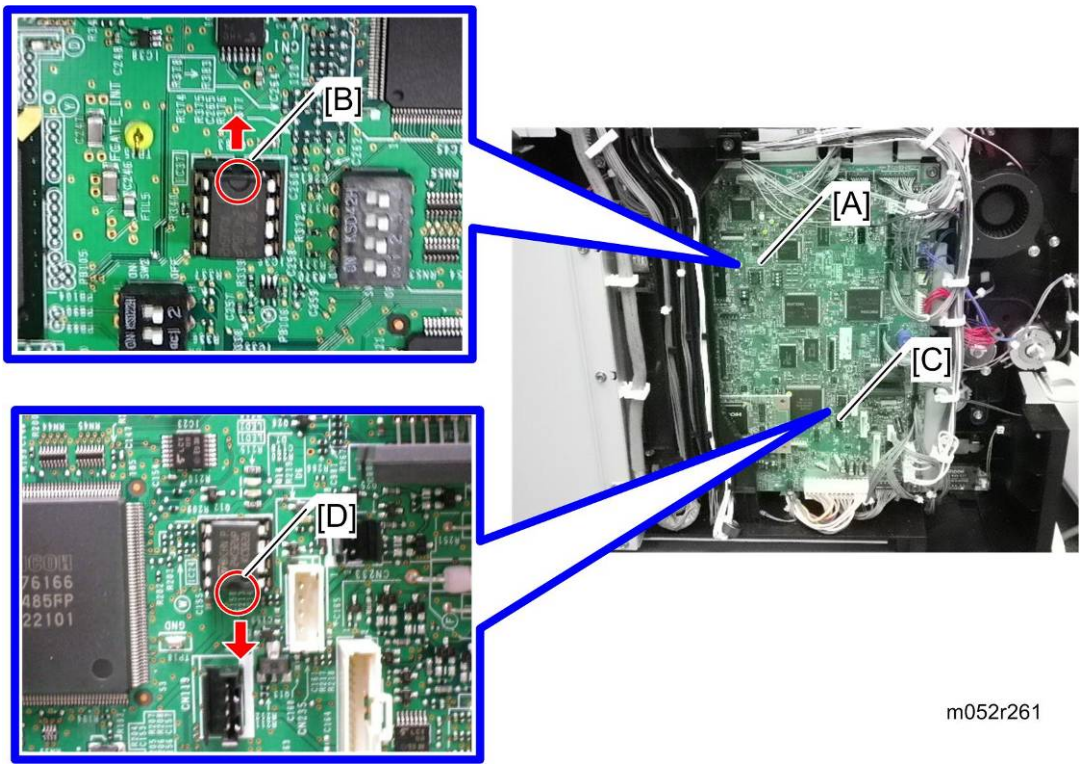
4.12.5 EEPROMS

1. Left cover (☛p.4-11)



2. EEPROMs [A]

When reinstalling a new EEPROM



1. Make sure that you have the SMC report (factory settings). This report comes with the

machine.

2. Output the SMC data (SP5-990-001) if possible.
3. Turn the main switch off.
4. Install an SD card into SD card slot 2 (lower slot). Then turn the main power on.
5. Copy the EEPROM data to an SD card (SP5-824-001) if possible.
6. Turn off the main switch. Then unplug the power cord.
7. Replace the EEPROM on the BICU and reassemble the machine.
8. Install a new EEPROM (labeled FRAM0) in the upper slot [A] with the half-disk mark [B] facing the upward and EEPROM (labeled FRAM1) in the lower slot [C] with the half-disk mark [B] facing the downward.

Important

- Make sure that a FRAM0 EEPROM and FRAM1 EEPROM are installed in the correct position.

9. Plug in the power cord. Then turn the main switch on.
10. Copy the data from the SD card to the EEPROM (SP5-825-001) if you have successfully copied them to the SD card.
11. Turn the main switch off. Then remove the SD card from SD card slot 2 (lower slot).
12. Turn the main switch on.
13. Specify the SP and UP mode settings.

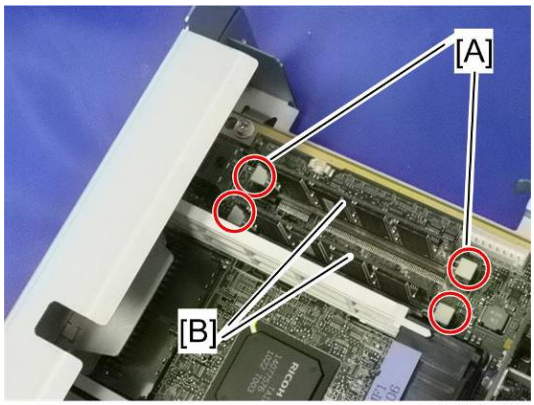
If NVRAM Data Upload and Download cannot be done for BICU EEPROMs:

Do all of the following procedure if **SP5-824-001** (NVRAM Data Upload) and SP5-825-001 (NVRAM Data Download) cannot be performed for some reason:

1. Manually enter all data on the SMC report (factory settings).

4.12.6 DIMM RAM

1. Controller unit (☛p.4-71)

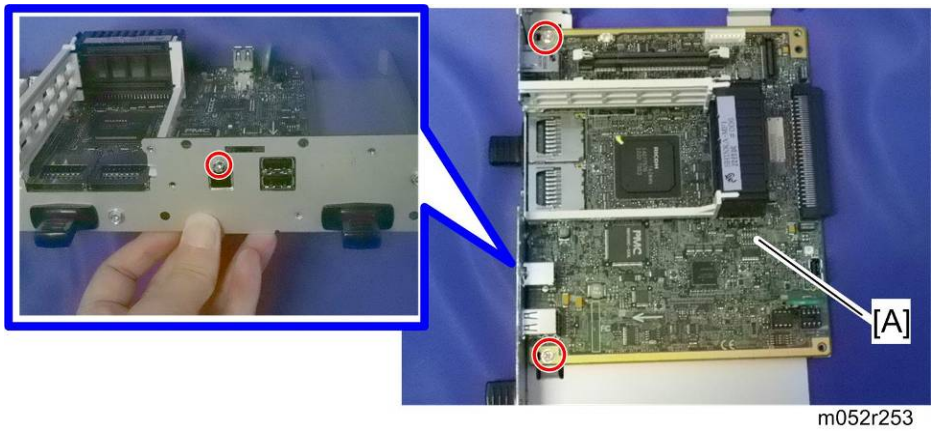


m052r252

2. Release the locks [A], and then remove the DIMM RAM(s) [B]

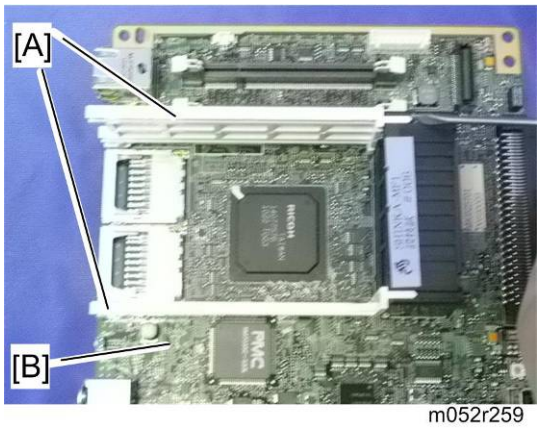
4.12.7 CONTROLLER BOARD

1. Controller unit (☛p.4-71)
2. DIMM RAMs (☛p.4-77)
3. HDD unit bracket (☛p.4-72 "HDD Unit")
4. NVRAM (☛p.4-73)



m052r253

5. Controller board with rails [A] (x 3)



m052r259

6. Two Rails [A]
7. Controller board [B]

When installing a new controller board

1. Remove the NVRAM from the old controller board.
2. Install the NVRAM on a new controller board after you replace the controller board.
3. Reassemble the machine.
4. Turn on the main power of the machine

Note

- Make sure you print out the SMC reports (“SP Mode Data” and “Logging Data”) before you replace the NVRAM.

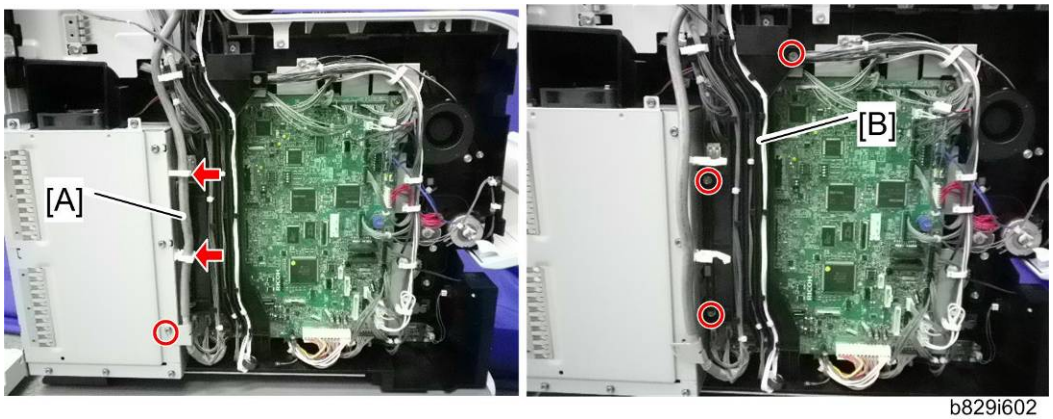
CAUTION

- Keep NVRAM away from any objects that can cause static electricity. Static electricity can damage NVRAM data.
- Make sure the NVRAM is correctly installed on the controller board.

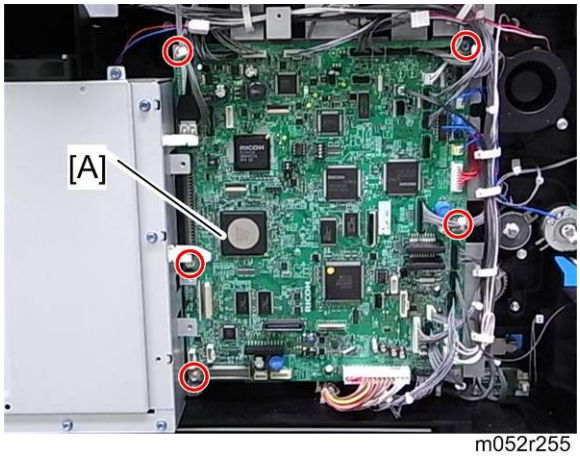
4.12.8 BICU

BICU

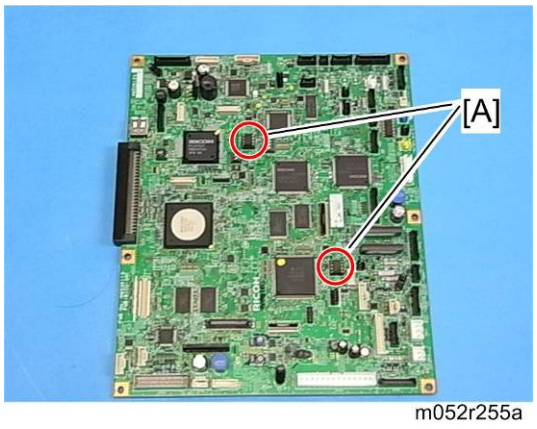
1. Left cover (☛p.4-11)



2. Take aside the scanner I/F cable [A] (x 1, x 2).
3. Take aside the harness guide [B] (x 3).



4. BICU [A] (x All, x all, x 6)



5. EEPROMs [A]

When installing a new BICU

1. Remove the EEPROM from the old BICU.
2. Install the EEPROM on the new BICU after you replace the BICU.
3. Reassemble the machine.
4. Turn on the main power of the machine.
5. "SC995-01" occurs.
6. Enter the SP mode, and then select SP5-811-004.
7. Enter the serial number with SP5-811-004, and then exit the SP mode.
8. Turn the main power of the machine off and on.

Note

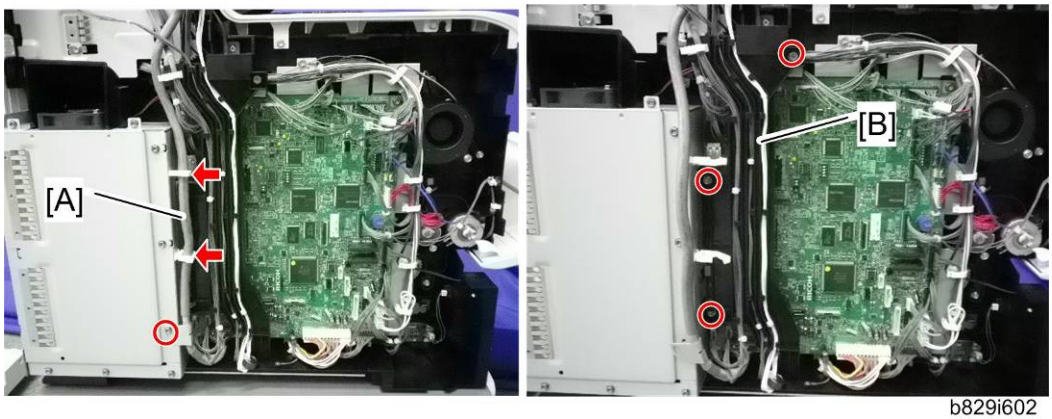
- Make sure you print out the SMC reports ("SP Mode Data" and "Logging Data") before you replace the EEPROM.

CAUTION

- Keep an EEPROM away from any objects that can cause static electricity. Static electricity can damage EEPROM data.

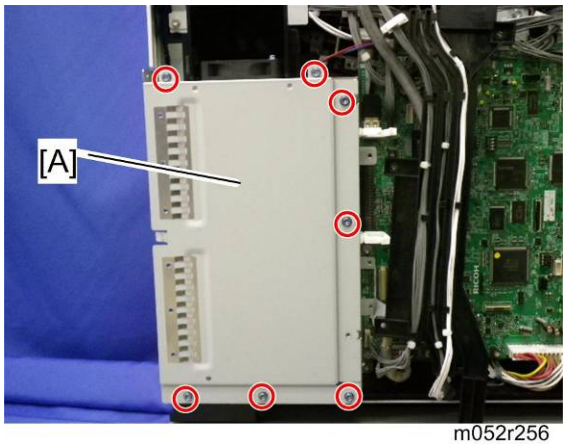
BICU Bracket

1. Left cover (☛p.4-11)
2. Controller unit (☛p.4-71)



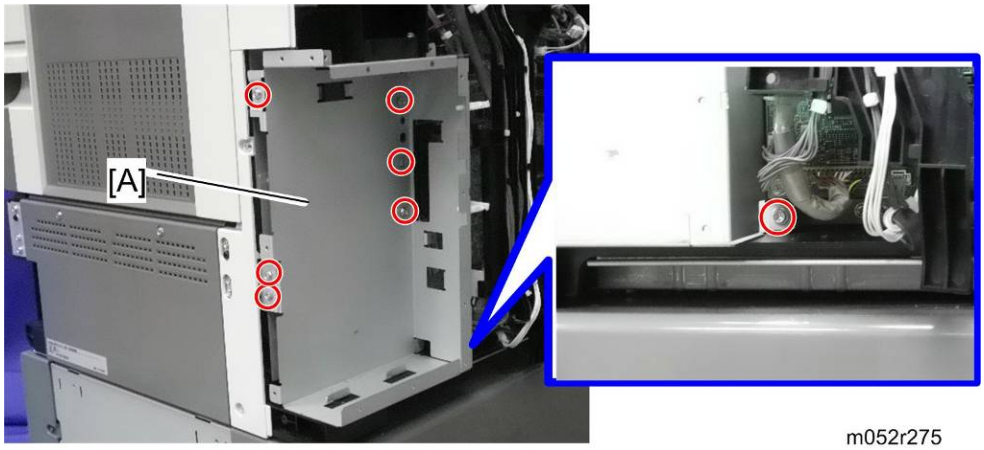
b829i602

3. Take aside the scanner I/F cable [A] (x 1, x 2).

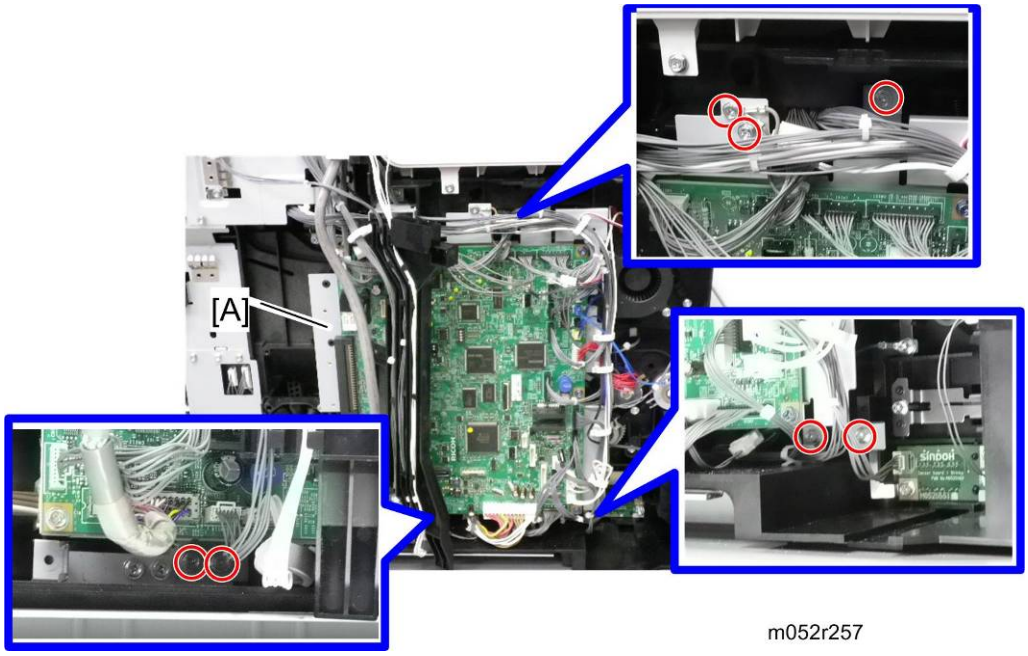


m052r256

4. Controller box cover [A] (x 7)



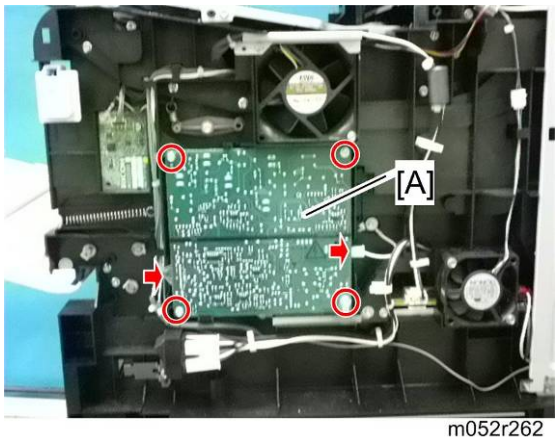
5. Controller box [A] (x 6)



6. BICU bracket [A] (x all, x all, x 7)

4.12.9 HVPS (HIGH VOLTAGE POWER SUPPLY)

1. Right cover (☛p.4-12)

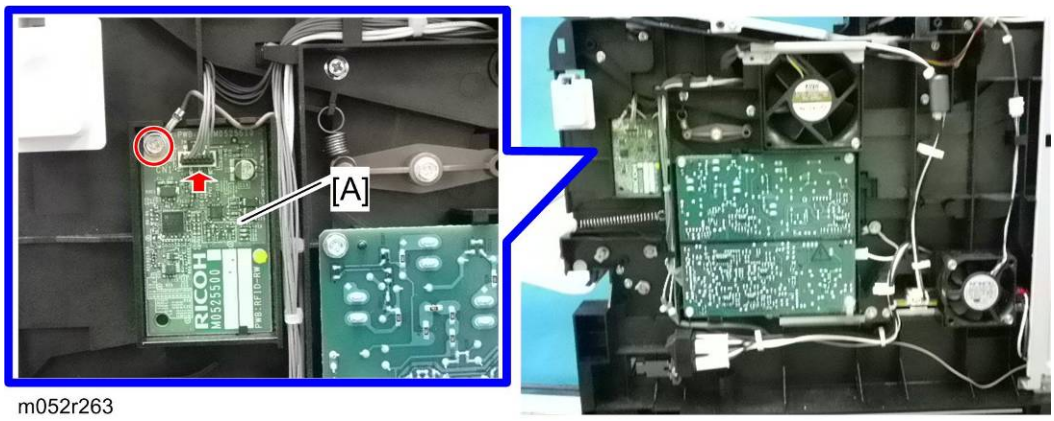


m052r262

2. HVPS [A] (x4, x 2)

4.12.10 RFID BOARD

1. Right cover (☛p.4-12)

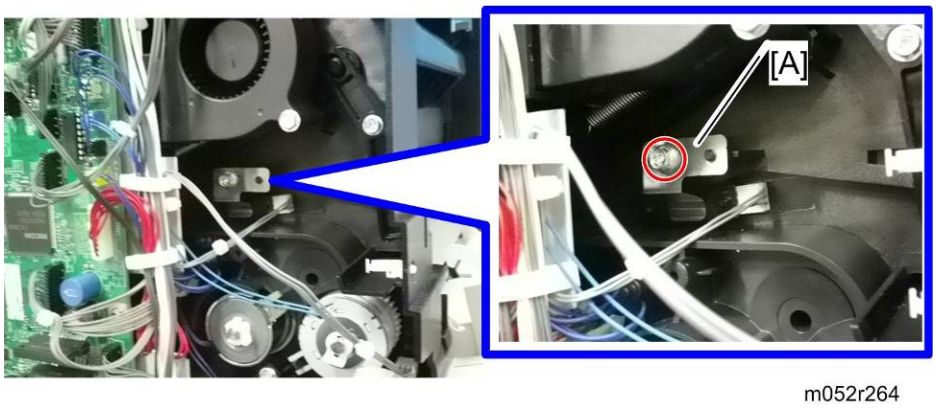


m052r263

2. RFID board [A] (x 1, x 1, hook)

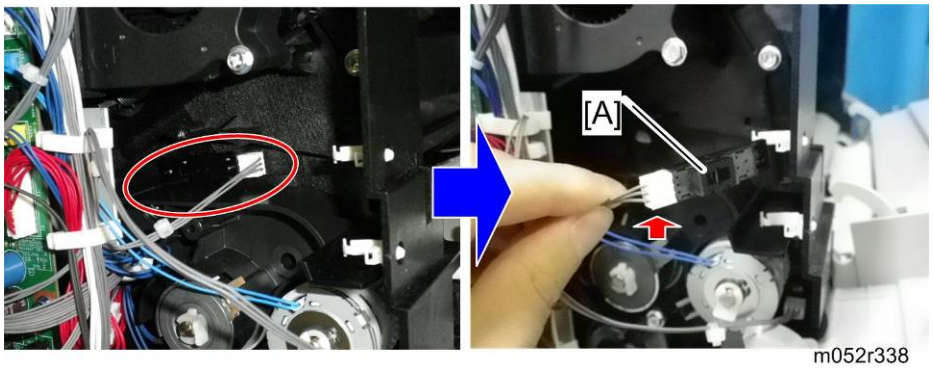
4.12.11 TONER END SENSOR

1. Left cover (☛p.4-11)



m052r264

2. Sensor holder [A] (x 1)

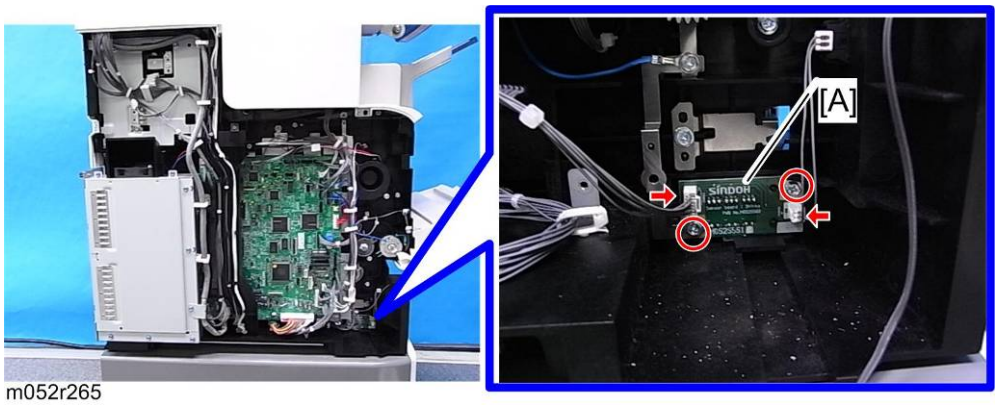


m052r338

3. Toner end sensor [A] (x 1)

4.12.12 PAPER SIZE SENSOR BOARD

1. Left cover (☛p.4-11)

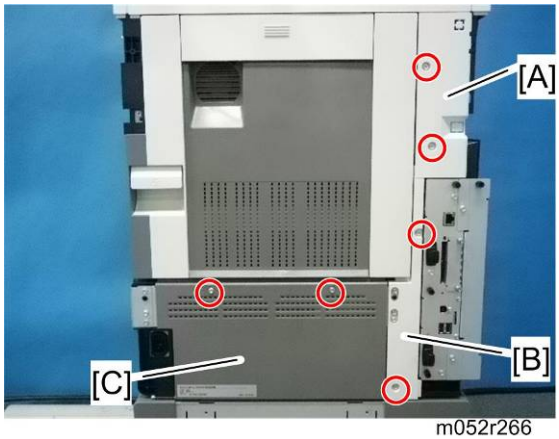


m052r265

2. Paper size sensor board [A] (x 2, x 2)

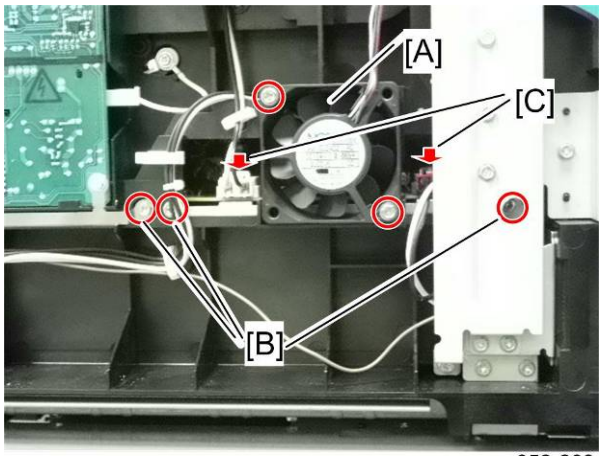
4.12.13 PSU

1. Left cover (☛p.4-11)
2. Right cover (☛p.4-12)



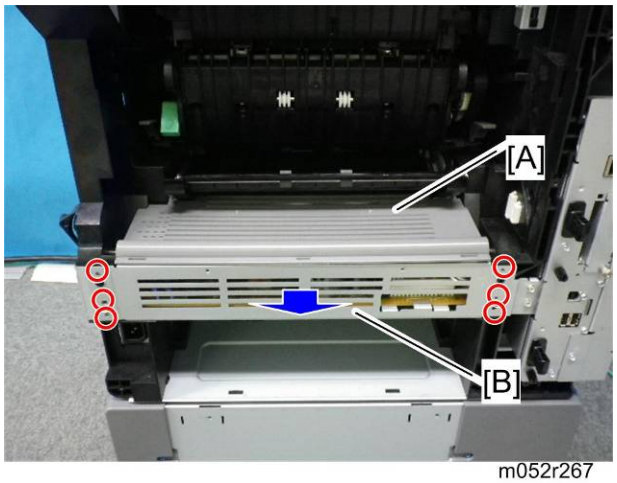
m052r266

3. Rear left middle cover [A] (x 2)
4. Rear left lower cover [B] (x 2)
5. Rear lower cover [C] (x 2)
6. Duplex unit (☛p.4-65)



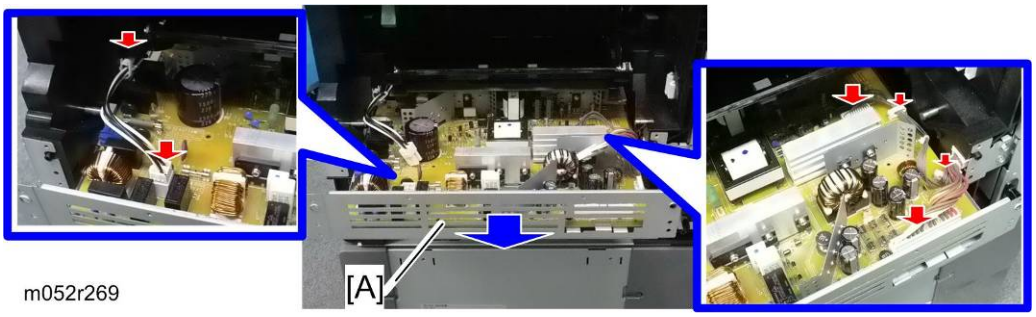
m052r268

7. Take aside the PSU fan [A] on the right of the machine (x 2).
8. Remove three screws [B] and disconnect two cables [C] on the right of the PSU.



m052r267

9. PSU cover [A]
10. Pull the PSU [B] little bit.
    - Do not pull the PSU fully at this time. Some cables and harnesses are connected.



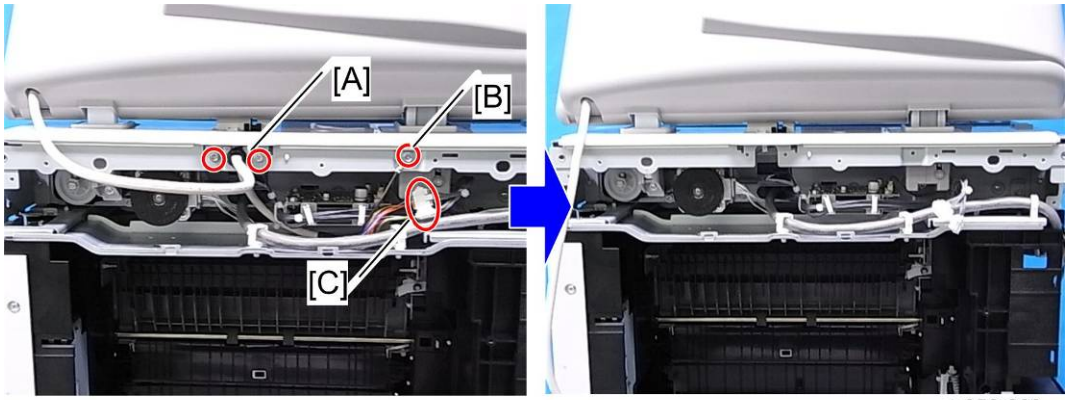
m052r269

11. Disconnect three cables on the PSU (🖃 x 3).
12. Pull out the PSU [A] from the machine.

4.13 ARDF

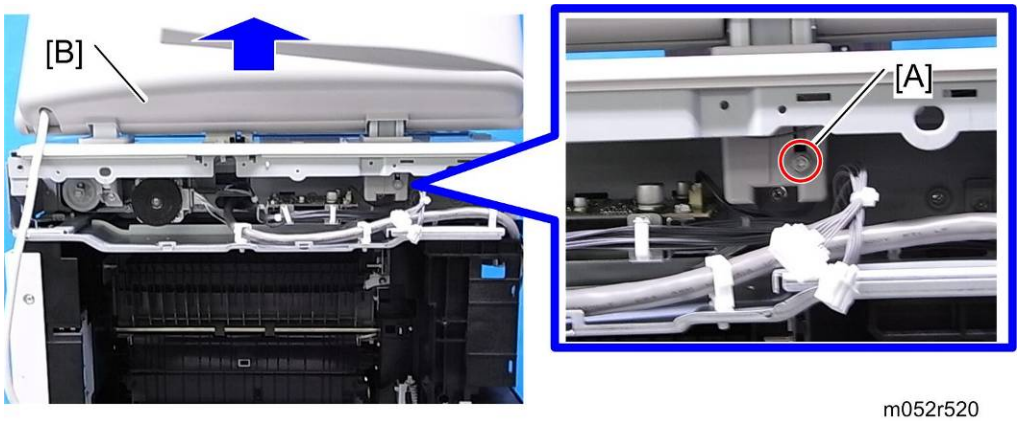
4.13.1 ARDF

1. Scanner rear cover (☛p.4-24)



m052r260

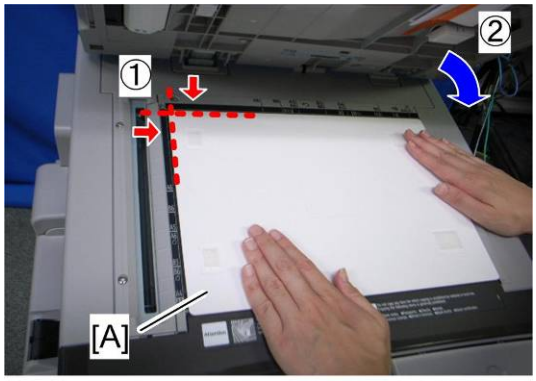
2. IF cable bracket [A] (x 2)
3. Remove the ground cable [B] (x 1).
4. Disconnect two connectors [C].



m052r520

5. Remove the screw [A].
6. Lift the ARDF [B].

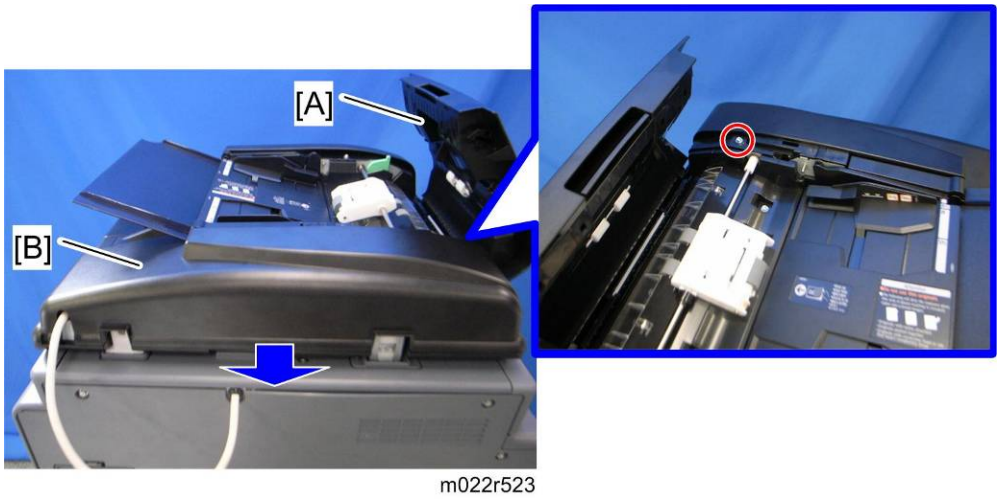
When installing the Platen Sheet



m022i537

When setting the platen cover [A], it is necessary to have a gap (1 to 2 mm) on the upper side and on the left side.

4.13.2 ARDF REAR COVER

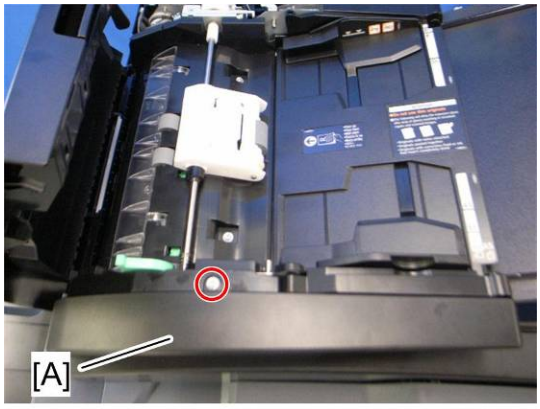


m022r523

1. Open the ARDF left cover [A].
2. ARDF rear cover [B] (x 1)

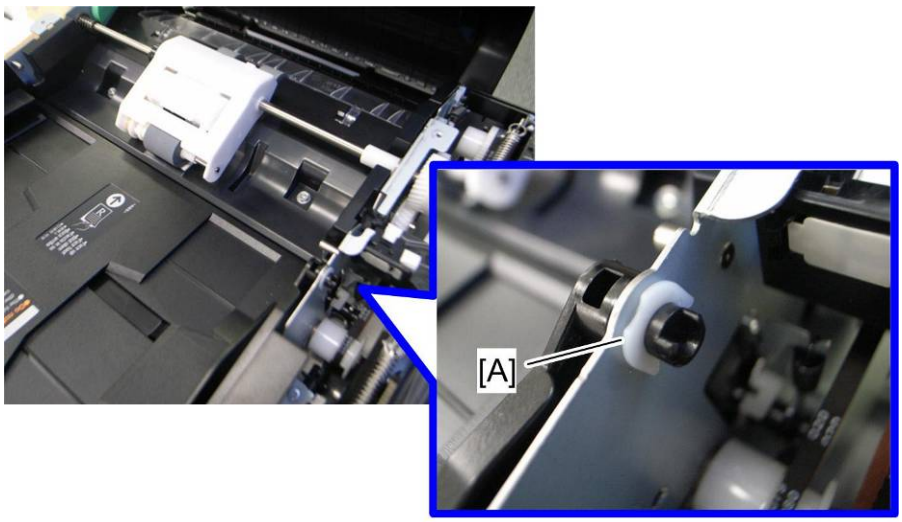
4.13.3 ARDF FRONT COVER AND ORIGINAL TRAY

1. ARDF rear cover (☛p.4-88)



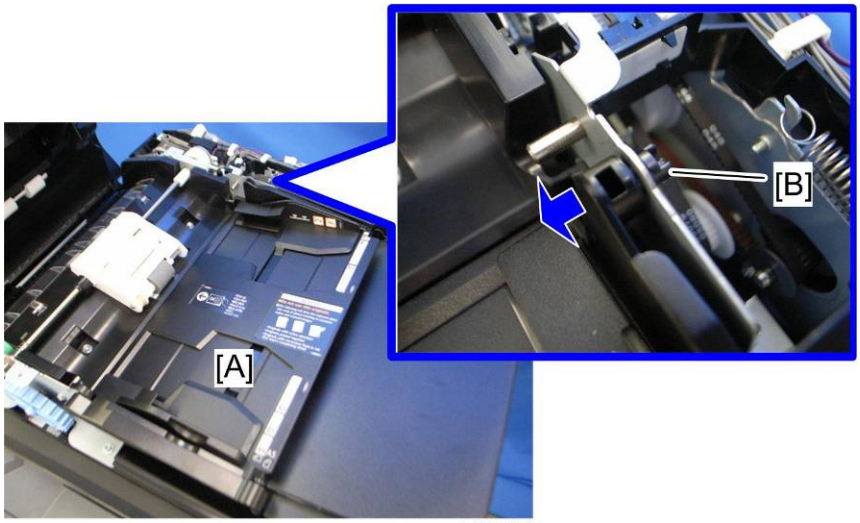
m022r524

2. ARDF front cover [A] (x 1)



m022r525

3. Remove the snap ring [A].

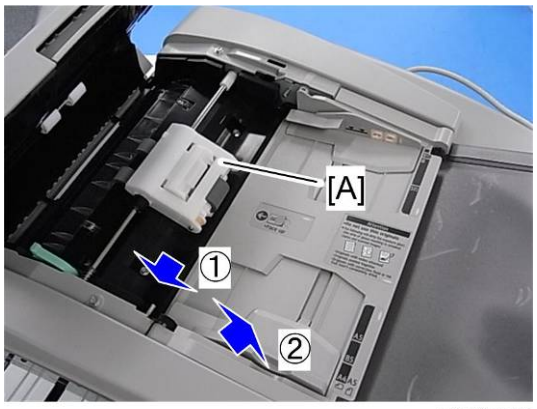


m022r526

4. Remove the original tray [A], and release the rear shaft [B].

4.13.4 ORIGINAL FEED UNIT

1. Open the ARDF left cover (☛p.4-88 "ARDF Rear Cover").

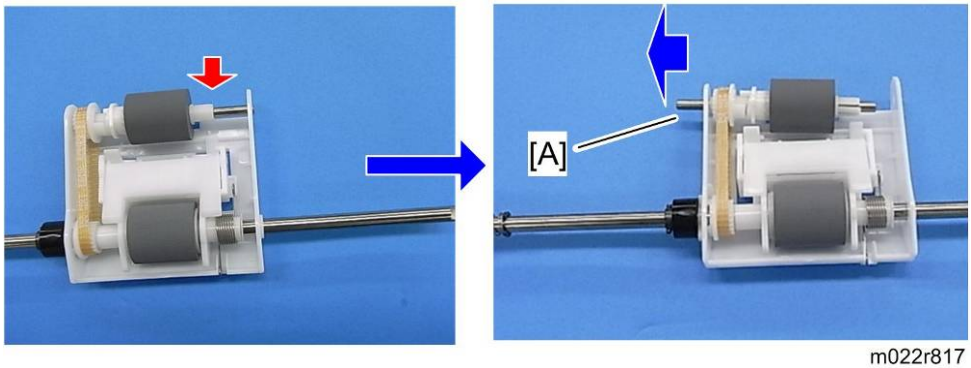


m022r816

2. Original feed unit [A].

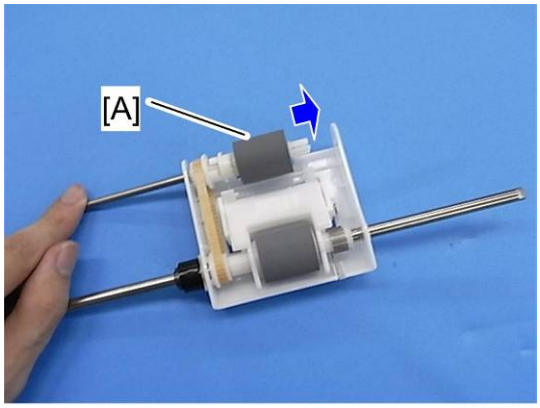
4.13.5 PICK-UP ROLLER

1. Original feed unit (☛p.4-90)



m022r817

2. Slide the shaft [A] (hook x 1).

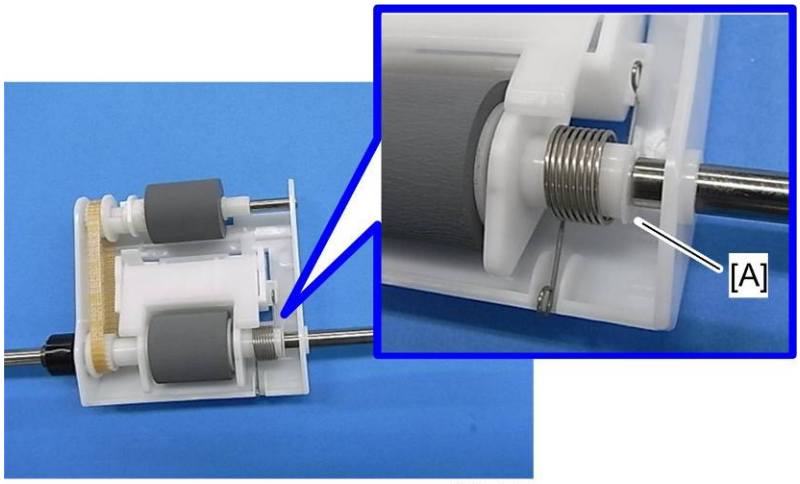


m022r818

3. Pick-up roller [A]

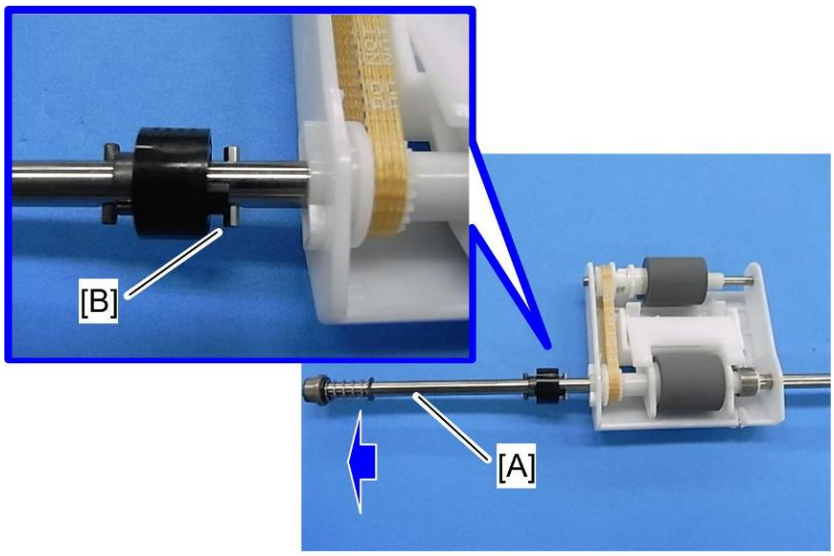
4.13.6 FEED ROLLER

1. Original feed unit (☛p.4-90)



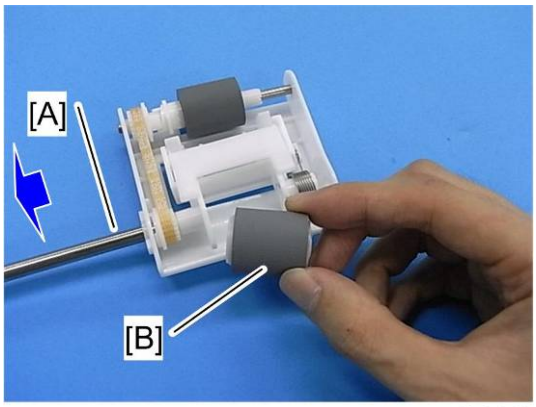
m022r819

2. Remove the clip [A].



m022r820

3. Slide the shaft [A], and then remove the pin [B].

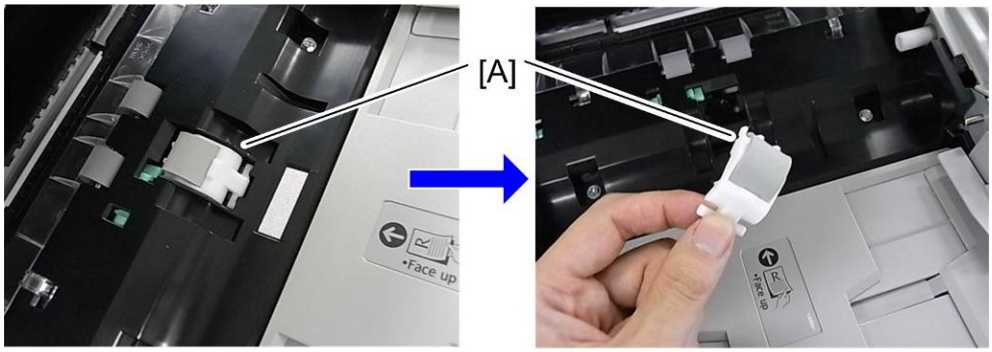


m022r821

4. Slide the feed roller [B].

4.13.7 ARDF FRICTION PAD

1. Original feed unit (☛p.4-90)

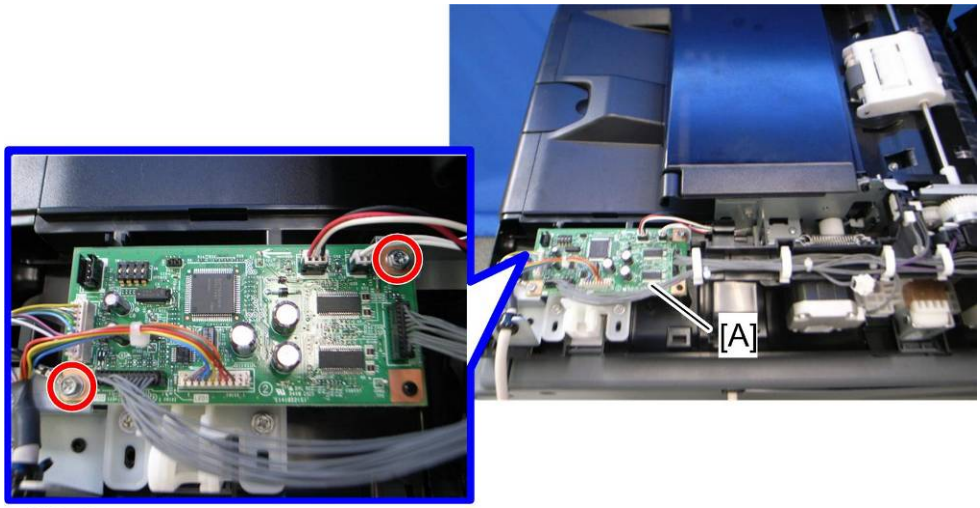


m022r822

2. ARDF friction pad [A] (hooks)

4.13.8 ARDF DRIVE BOARD

1. ARDF rear cover (☛p.4-88)

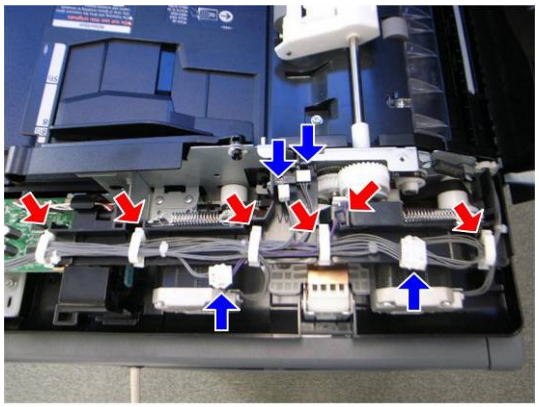


m022r527

2. ARDF drive board [A] (x 2, all s)

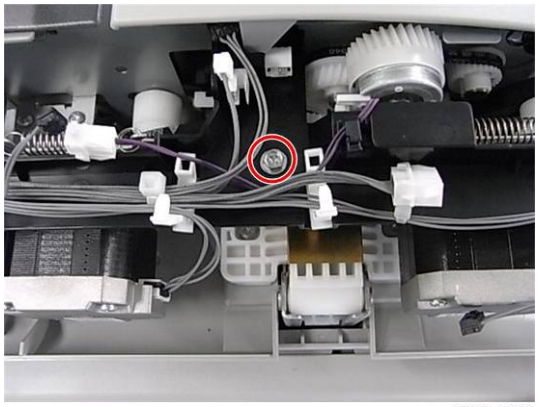
4.13.9 ORIGINAL SET SENSOR AND ARDF TOP COVER SENSOR

1. ARDF rear cover (☛p.4-88)



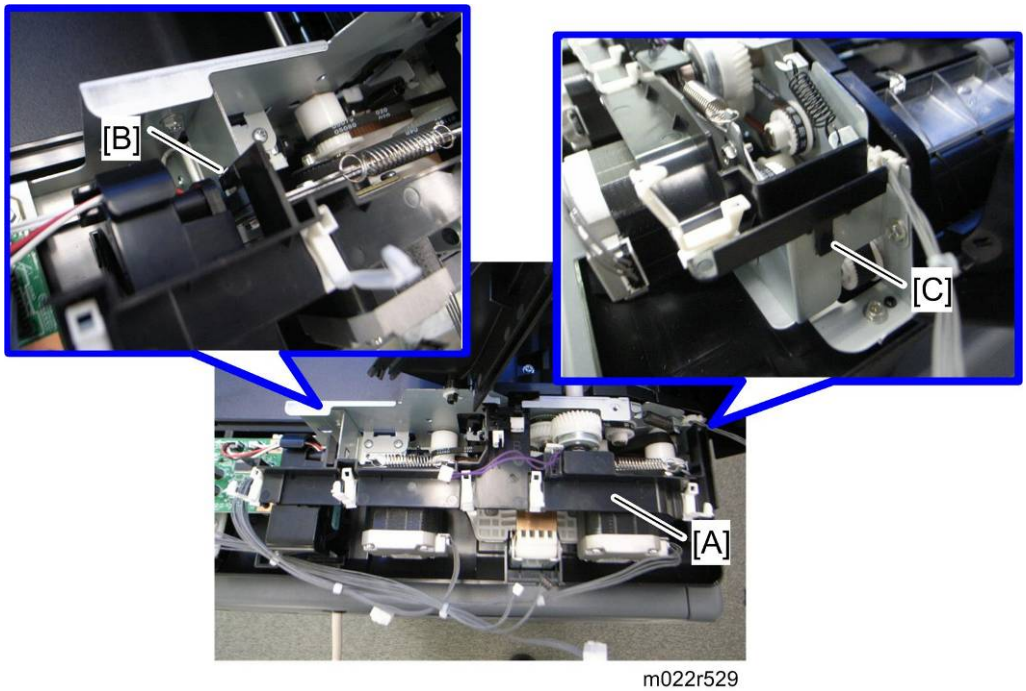
m022r528

2. Release the six clamps and disconnect the four connectors.



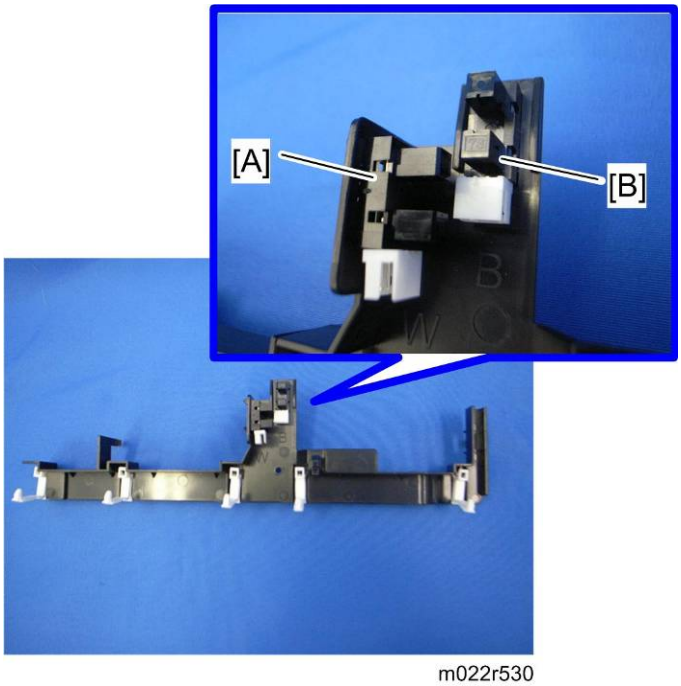
m022r826

3. Remove the screw.



m022r529

4. Remove the harness guide [A], and release the hooks [B] [C].

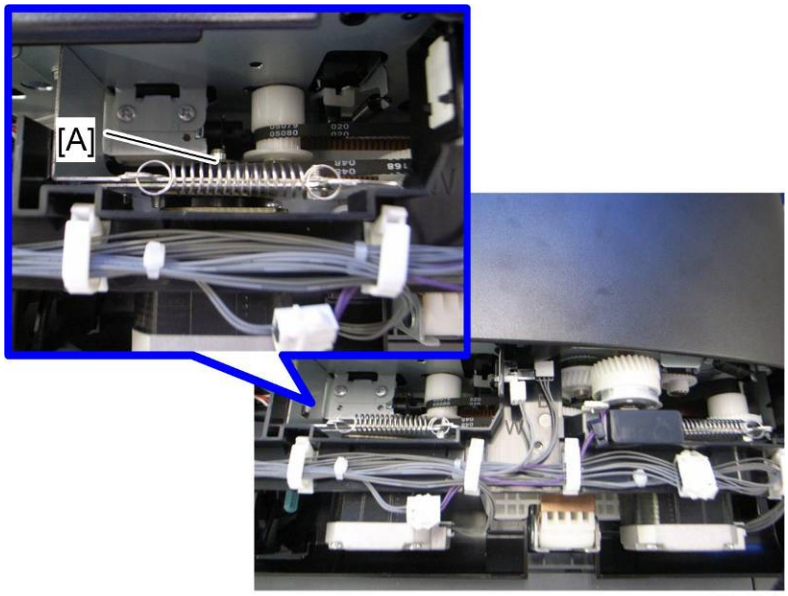


m022r530

5. ARDF top cover sensor [A] (hooks)
6. Original set sensor [B] (hooks)

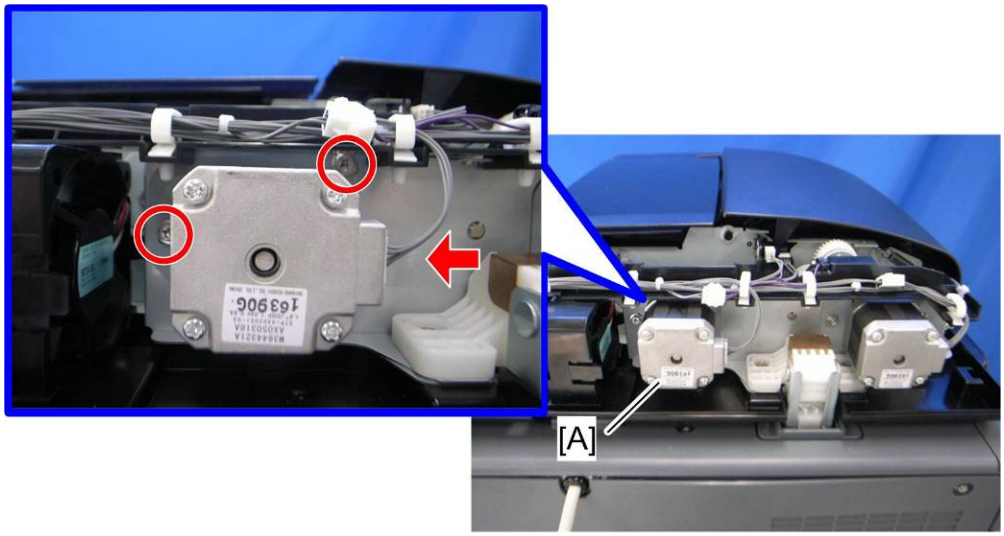
4.13.10 ARDF FEED MOTOR

1. ARDF rear cover (☛p.4-88)



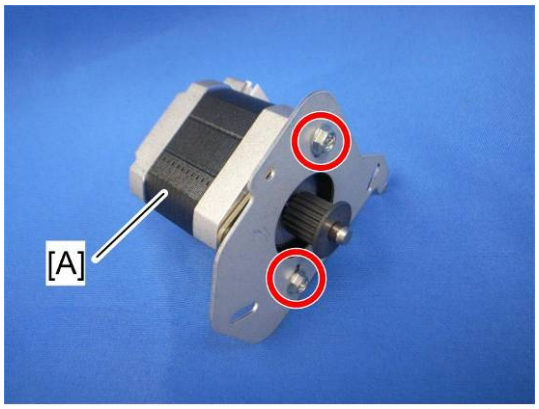
m022r531

2. Remove the spring [A].



m022r532

3. ARDF feed motor with bracket [A] (x 2, x 1)

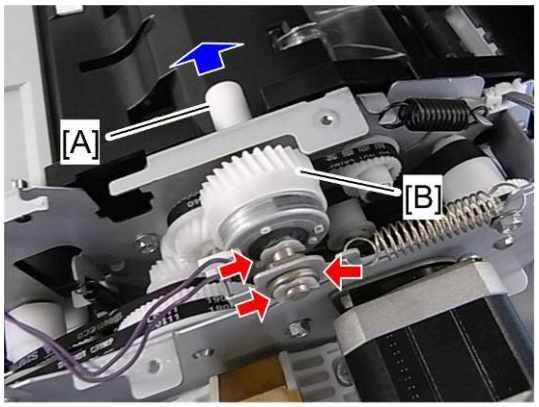


m022r533

4. ARDF feed motor [A] (x 2)

4.13.11 ARDF FEED CLUTCH

1. ARDF rear cover (☛p.4-88)
2. Harness guide (☛p.4-95 "Original Set Sensor and ARDF Top Cover Sensor")

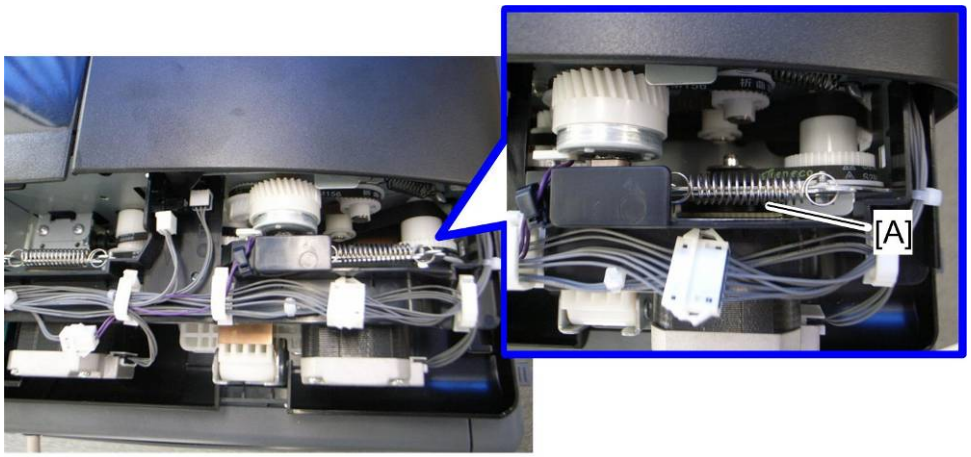


m022r827

3. Slide the shaft [A], and then ARDF feed clutch [B] (x 2, bushing x 1)

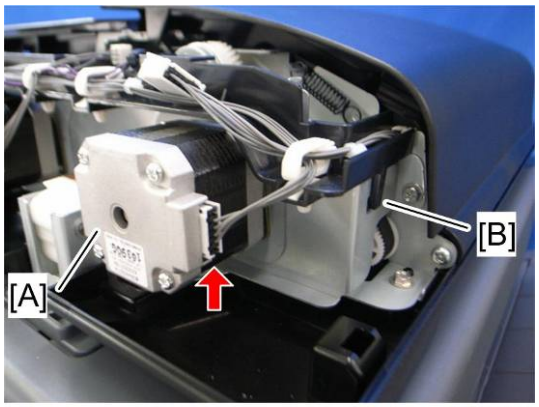
4.13.12 ARDF TRANSPORT MOTOR

1. ARDF rear cover (☛p.4-88)



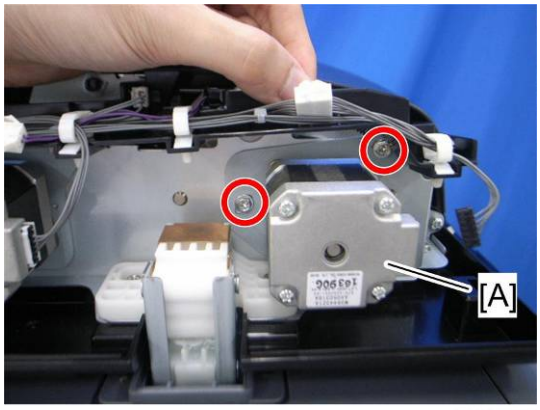
m022r534

2. Remove the spring [A].



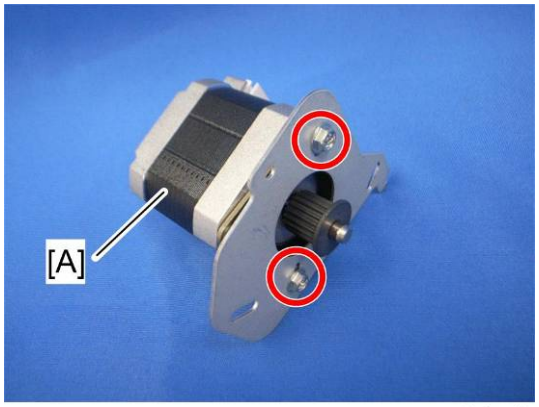
m022r535

3. Disconnect the harness of the transport motor [A].
4. Release the hook [B] of the harness guide.



m022r536

5. ARDF transport motor with bracket [A] (x 2)

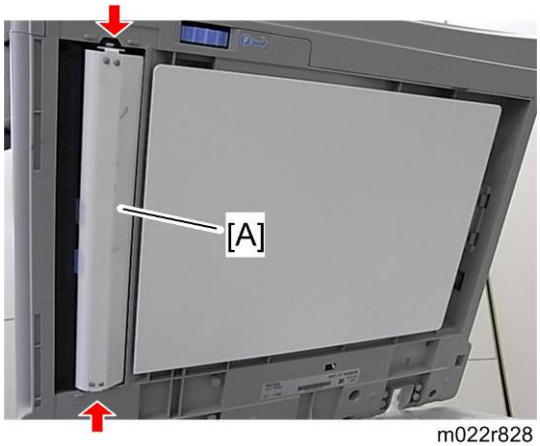


m022r533

6. ARDF transport motor [A] (x 2)

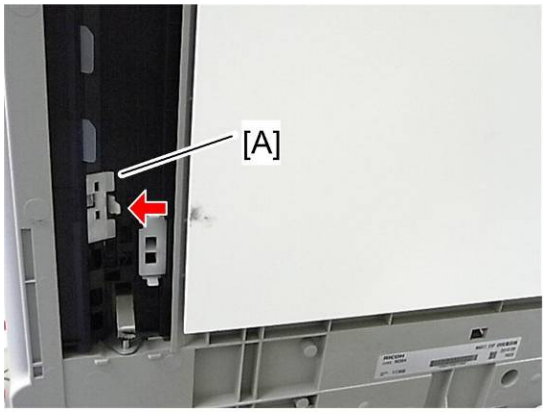
4.13.13 ARDF REGISTRATION SENSOR

1. Open the ARDF.



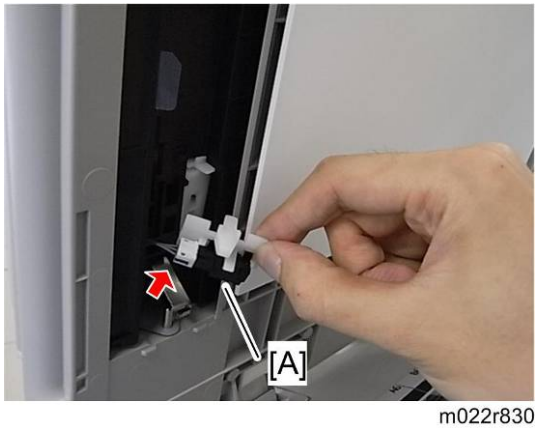
m022r828

2. Bracket [A] (hook x 2)



m022r829

3. ARDF registration sensor holder [A] (hook x 1)

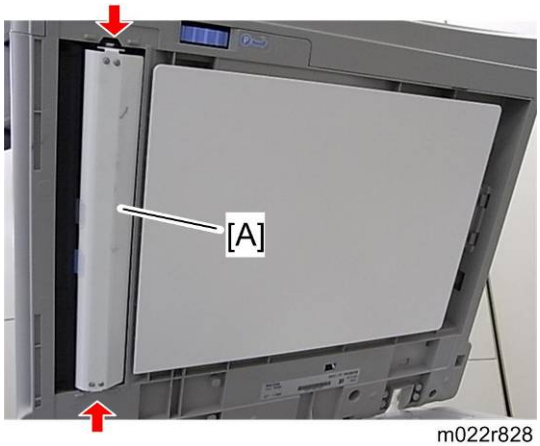


m022r830

4. ARDF registration sensor (x 1, hooks)

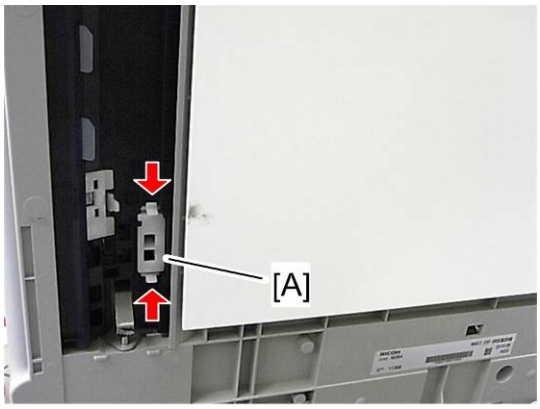
4.13.14 ARDF INVERTER SENSOR

1. Open the ARDF.



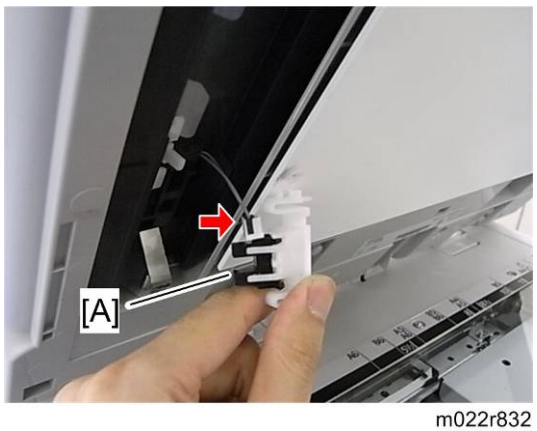
m022r828

2. Bracket [A] (hook x 2)



m022r831

3. ARDF inverter sensor holder [A] (hook x 2)

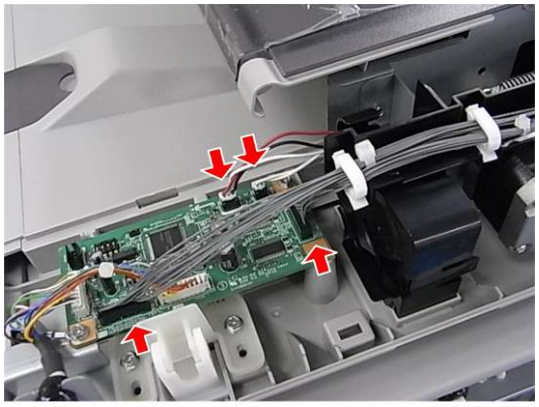


m022r832

4. ARDF inverter sensor (x 1, hooks)

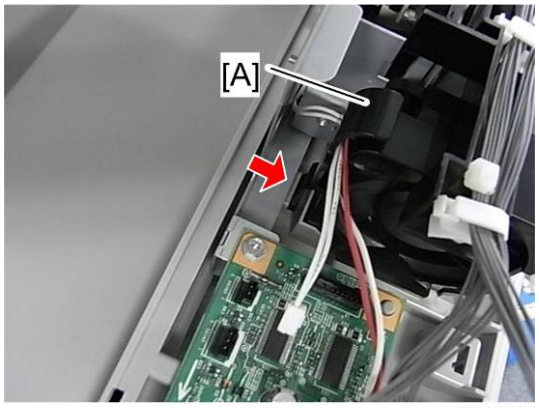
4.13.15 ARDF COOLING FAN

1. ARDF rear cover (☛p.4-88)



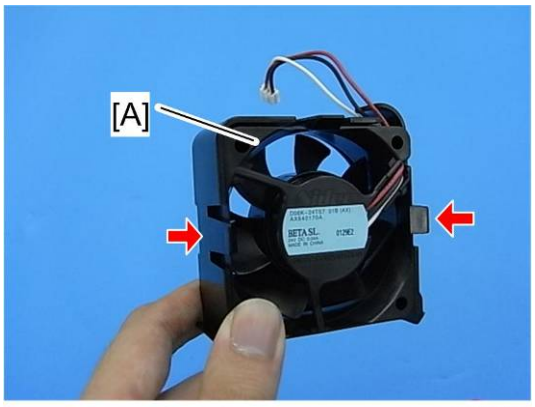
m022r823

2. Disconnect the four connectors.



m022r824

3. ARDF cooling fan cover [A] (hook x 1)



m022r825

4. ARDF cooling fan [A] (hook x 2)

When installing the cooling fan

Make sure that the cooling fan is installed with its decal facing the left of the machine.

4.14 INTERNAL FINISHER

Note

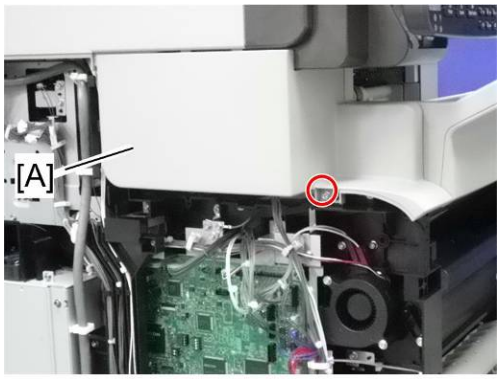
- This section is for the finisher model (M054).

4.14.1 INTERNAL FINISHER

1. Left cover (☛p.4-11)
2. Right cover (☛p.4-12)

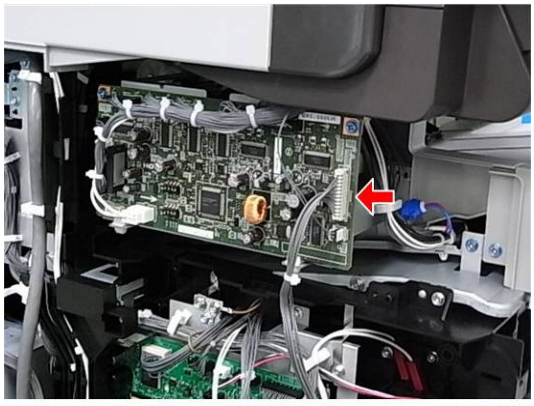
m052r536

3. Remove the two screws.



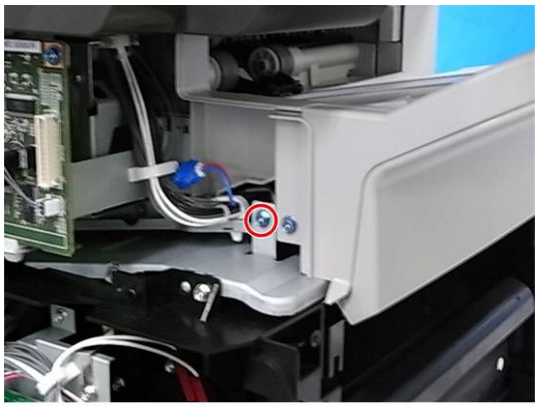
m052r516

4. Finisher left cover [A] (x 1)



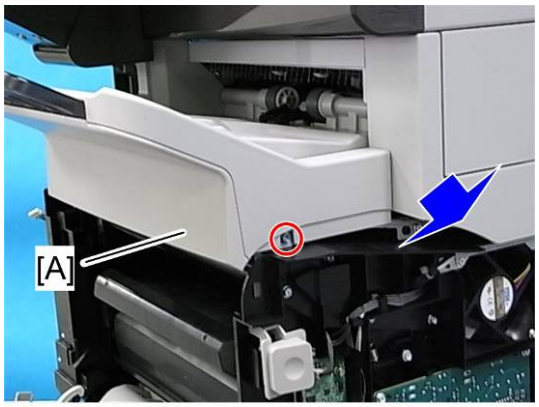
m052r537

5. Disconnect the connector.



m052r538

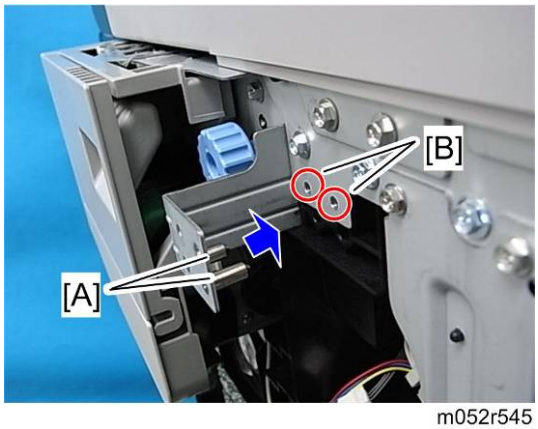
6. Remove the screw.



m052r539

7. Slide the internal finisher [A] to the right, and then remove it (x 1).

When reinstalling the internal finisher

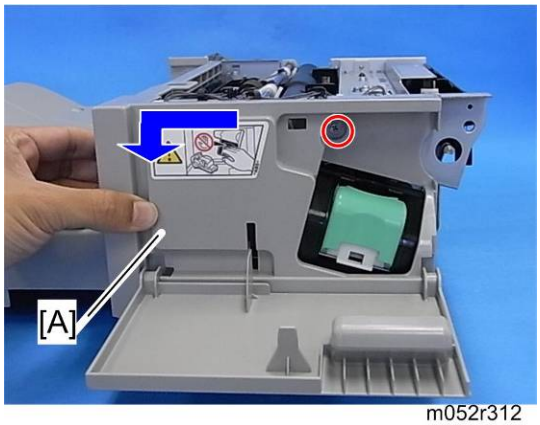


m052r545

Make sure that the pins [A] are installed in the holes [B].

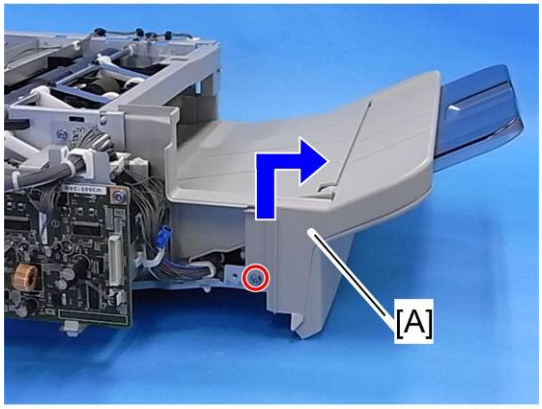
4.14.2 FINISHER OUTPUT TRAY UNIT

1. Internal finisher (☛ p.4-104)



m052r312

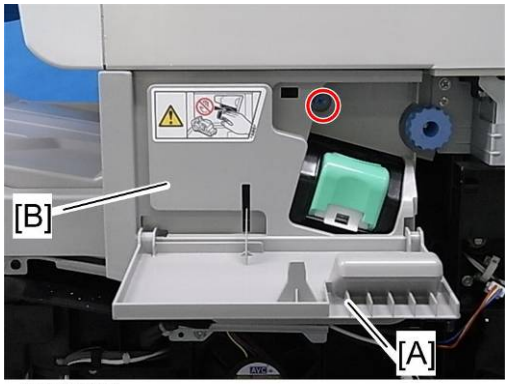
2. Finisher right cover [A] (x 1)



m052r313

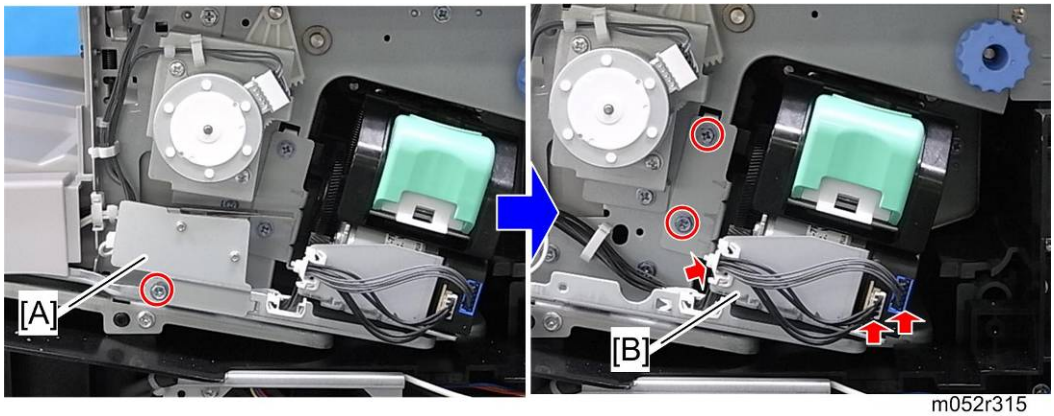
3. Finisher output tray unit [A] (x 1)

4.14.3 STAPLER UNIT



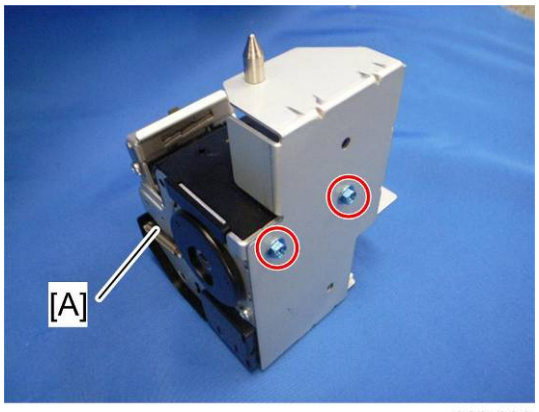
m052r314

1. Open the stapler door [A].
2. Finisher right cover [B] (x 1)



m052r315

3. Stapler door switch bracket [A]
4. Stapler unit bracket [B] (x 2, x 1, x 2)

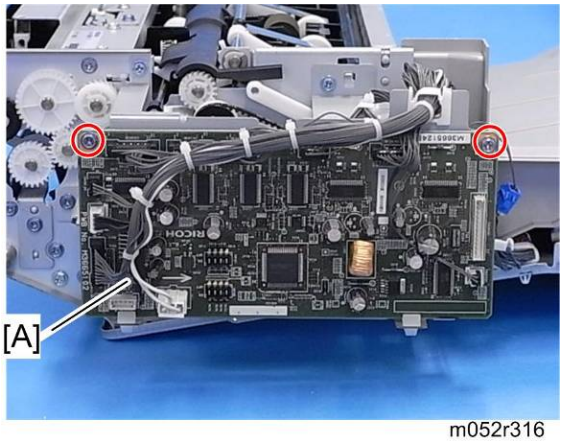


m022r636

5. Stapler unit [A] (x 2)

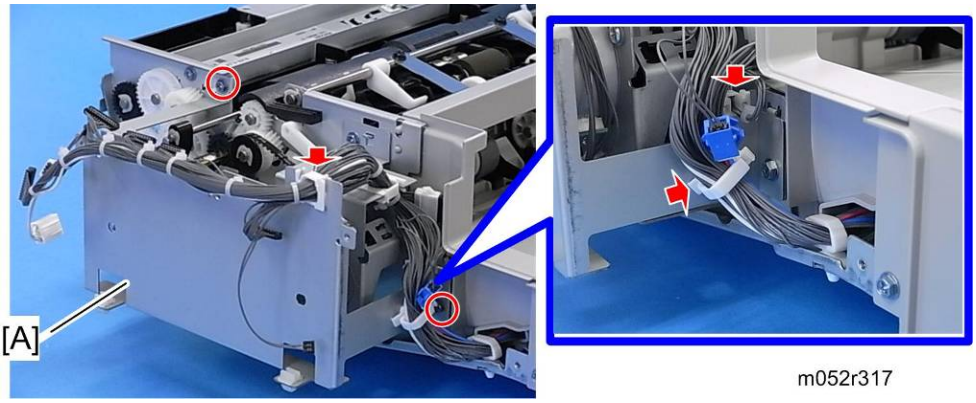
4.14.4 GATHERING ROLLER MOTOR

1. Internal finisher (☛p.4-104)



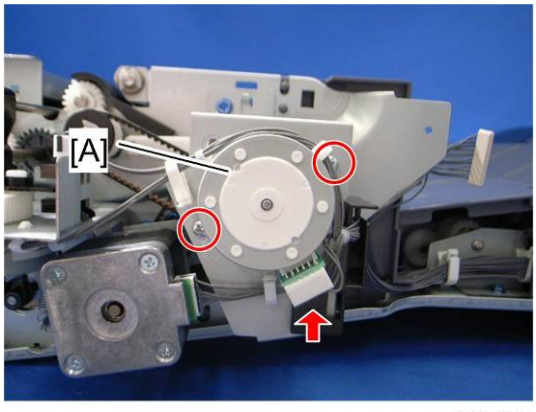
m052r316

2. Finisher main board [A] (x 2, x all)



m052r317

3. Finisher main board bracket [A] (x 2, x 3)

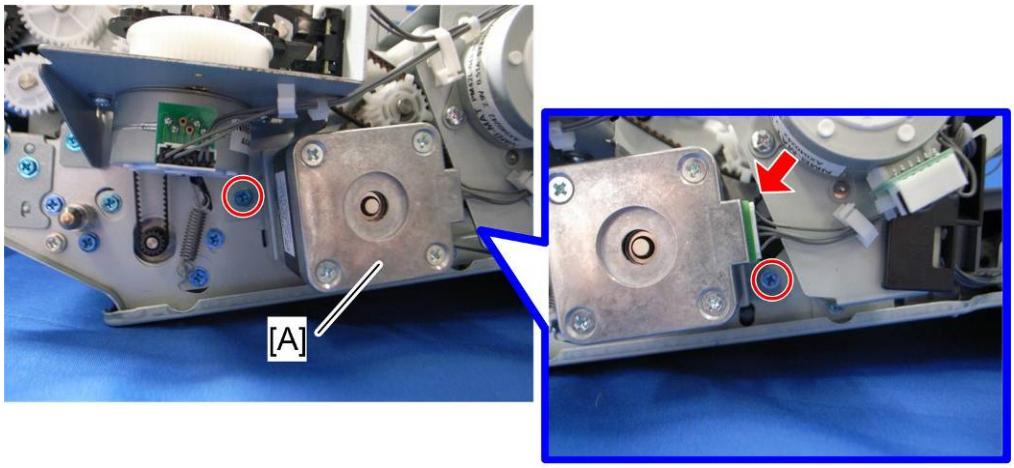


m022r637

4. Gathering roller motor [A] (x 2, x 1)

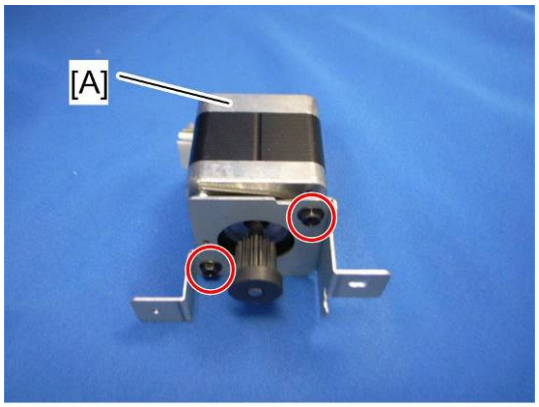
4.14.5 FINISHER PAPER EXIT MOTOR

1. Internal finisher (☛p.4-104)



m022r638

2. Paper exit motor bracket [A] (x 2, x 1)

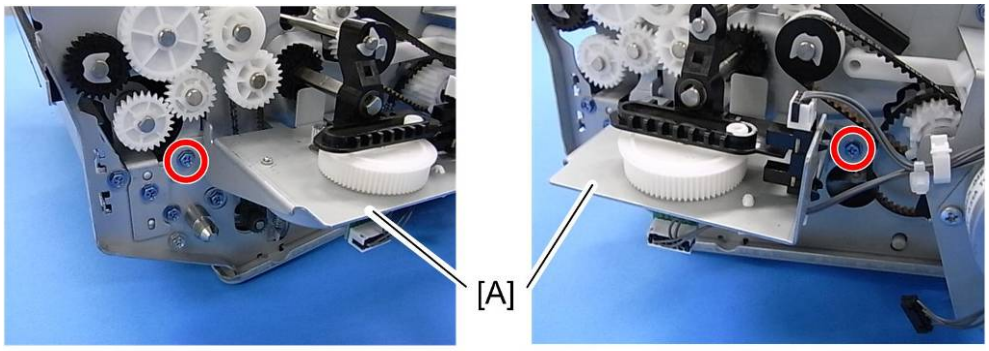


m022r639

3. Paper exit motor [A] (x 2)

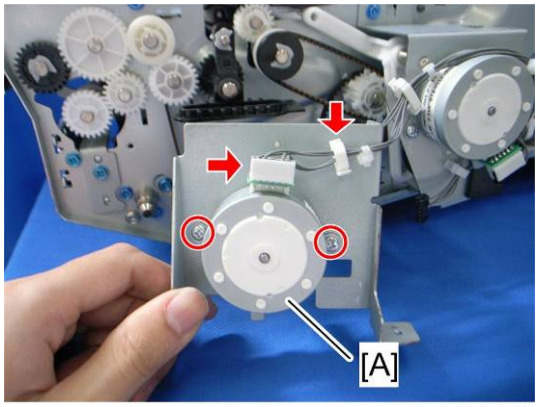
4.14.6 SHIFT ROLLER MOTOR

1. Internal finisher (☛p.4-104)
2. Finisher paper exit motor bracket (☛p.4-109 "Finisher Paper Exit Motor")



m022r790

3. Shift roller motor bracket [A] (x 2)

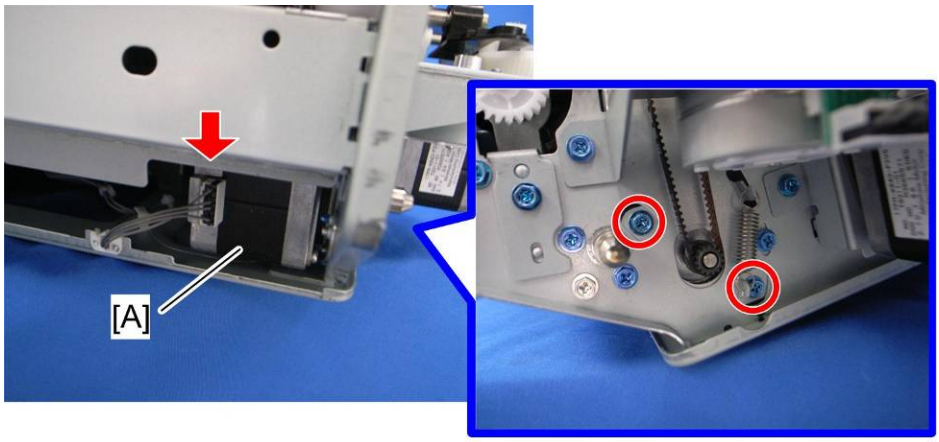


m022r640

4. Shift roller motor [A] (x 2, x 1, x 1)

4.14.7 FINISHER TRANSPORT MOTOR

1. Internal finisher (☛p.4-104)

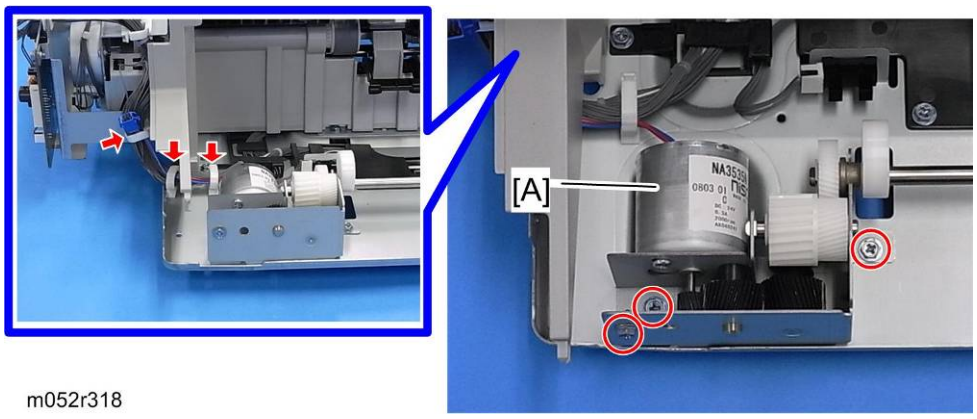


m022r641

2. Finisher transport motor (x 2, x 1)

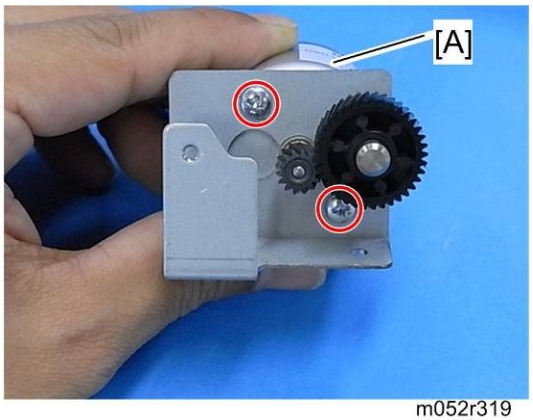
4.14.8 TRAY LIFT MOTOR

1. Internal finisher (☛p.4-104)
2. Finisher output tray unit (☛p.4-106)



m052r318

3. Tray lift motor bracket [A] (x 3, x 1, x 3)

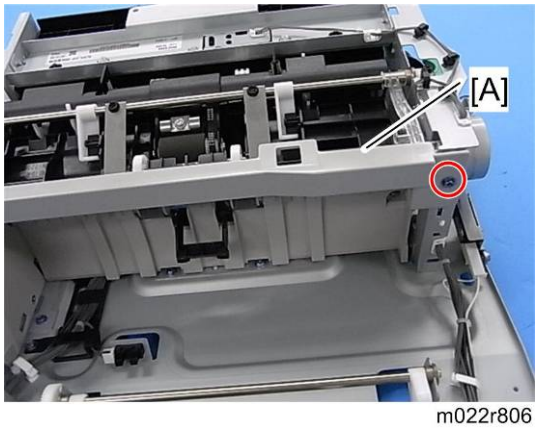


m052r319

4. Tray lift motor [A] (x 2)

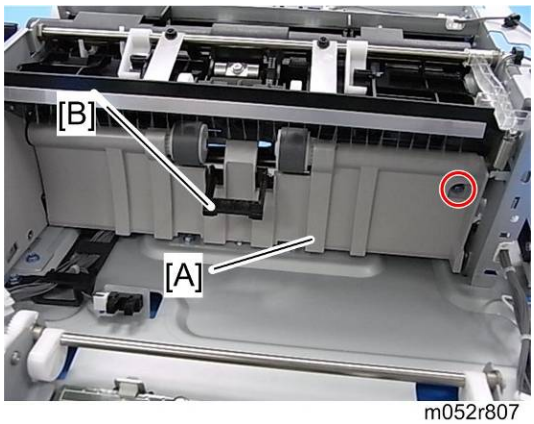
4.14.9 JOGGER FENCE HP SENSOR

1. Internal finisher (☛p.4-104)
2. Finisher output tray unit (☛p.4-106)



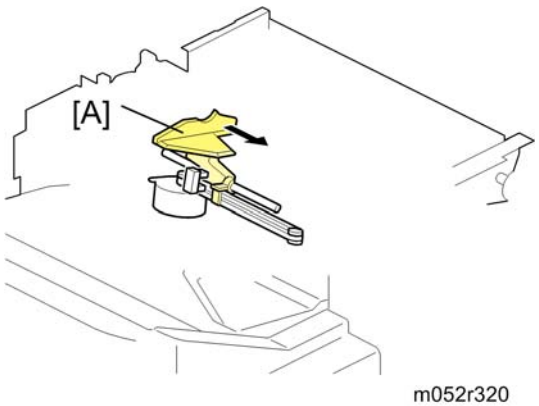
m022r806

3. Finisher top front cover [A] (x 1).



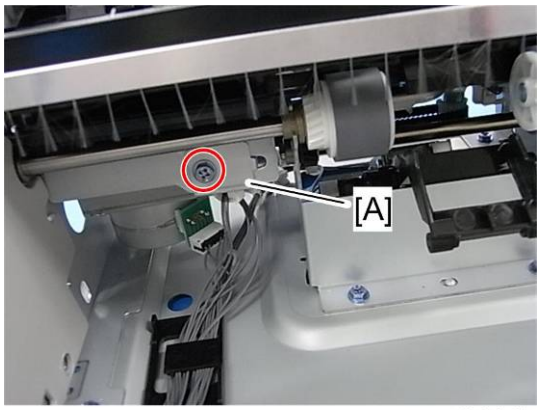
m052r807

4. Paper exit cover [A] (x 1)
   - Pull up the paper sensor actuator [B] when removing the guide plate.



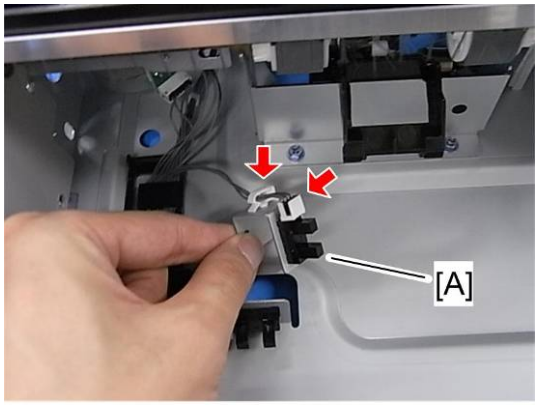
m052r320

5. Move the left jogger [A] to the center.



m022r808

6. Jogger fence HP sensor bracket [A] (x 1).

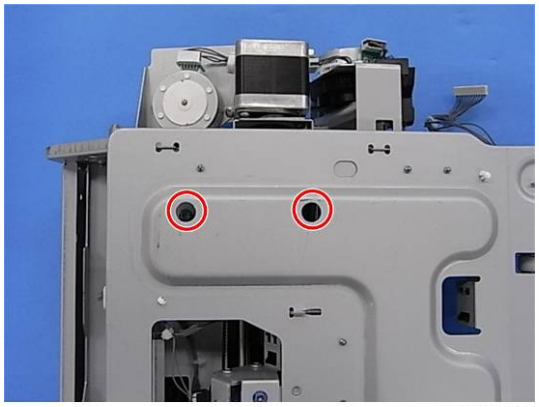


m022r809

7. Jogger fence HP sensor [A] (x 1, x 1, hooks)

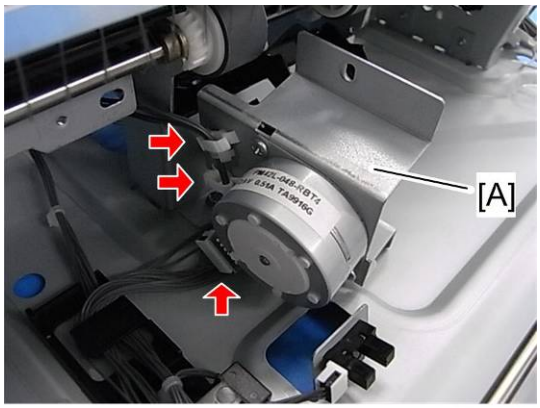
4.14.10 JOGGER MOTOR

1. Internal finisher (☛p.4-104)
2. Finisher output tray unit (☛p.4-106)
3. Finisher transport motor (☛p.4-111)
4. Jogger fence HP sensor bracket (☛p.4-113 "Jogger Fence HP Sensor")



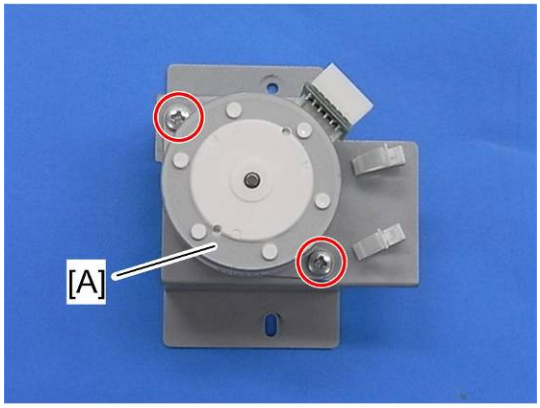
m022r810

5. Remove the two screws.



m022r812

6. Jogger motor bracket [A] (x 1, x 2)

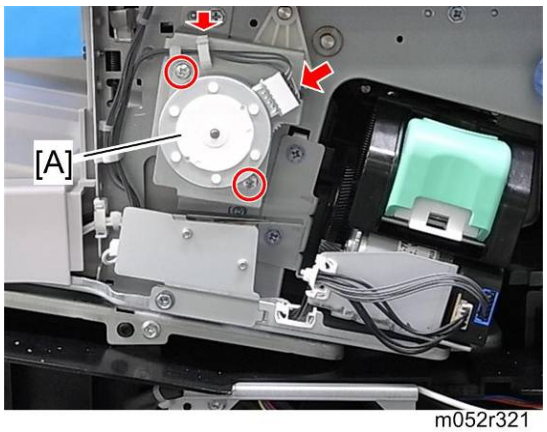


m022r813

7. Jogger motor [A](x 2)

4.14.11 EXIT GUIDE PLATE MOTOR

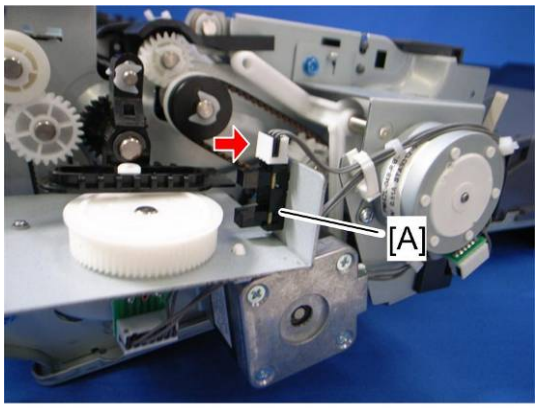
1. Finisher right cover (☛p.4-107 "Stapler Unit")



2. Exit guide plate motor [A] (x 2, x 1, x 1)

4.14.12 SHIFT ROLLER HP SENSOR

1. Internal finisher (☛p.4-104)
2. Finisher main board bracket (☛p.4-108 "Gathering Roller Motor")

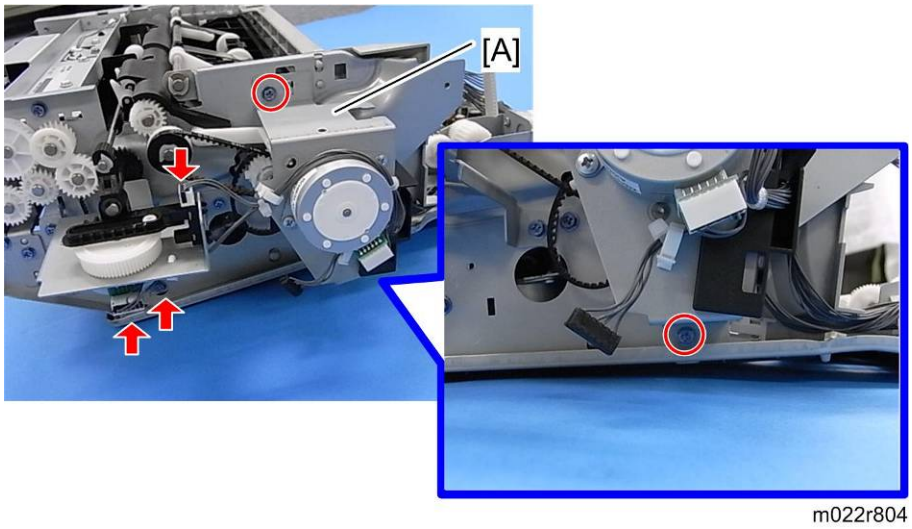


m022r642

3. Shift roller HP sensor [A] (☞ x 1, hooks)

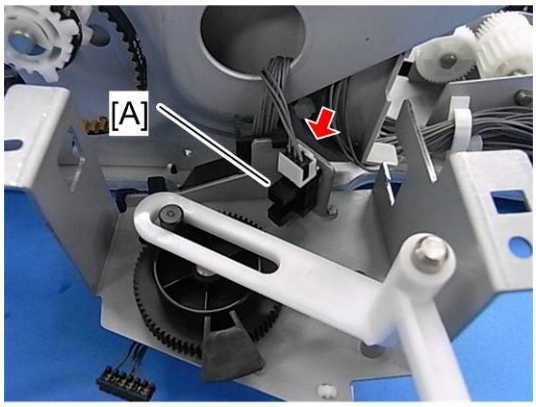
4.14.13 GATHERING ROLLER HP SENSOR

1. Internal finisher (☛p.4-104)
2. Finisher main board bracket (☛p.4-108 "Gathering Roller Motor")



m022r804

3. Gathering roller motor bracket [A] (x 2, x 2, x 1)

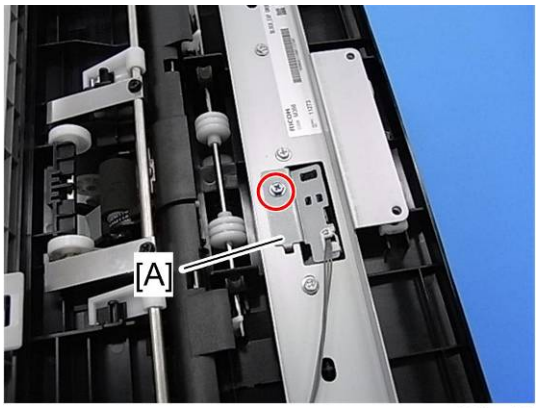


m022r805

4. Gathering roller HP sensor [A] (x 1, hooks)

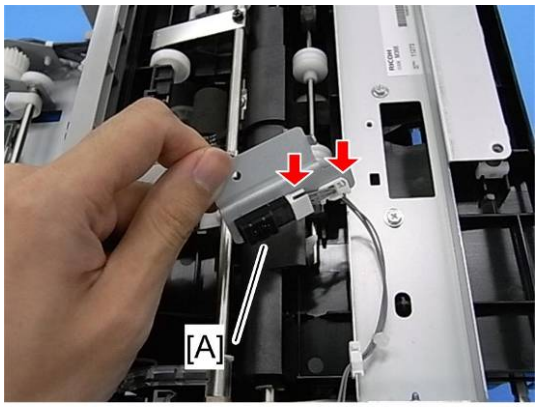
4.14.14 FINISHER ENTRANCE SENSOR

1. Internal finisher (☛p.4-104)



m022r798

2. Finisher entrance sensor bracket [A] (x 1)

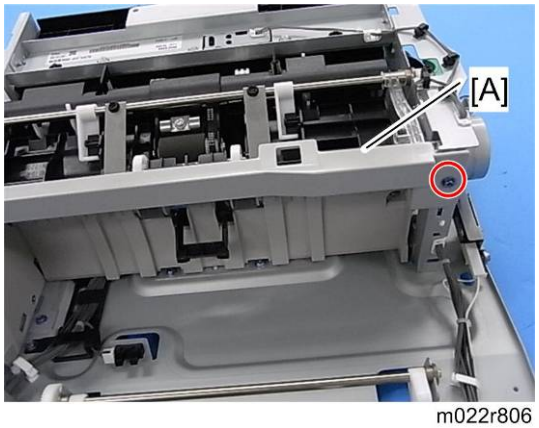


m022r799

3. Finisher entrance sensor [A] (x 1, x 1)

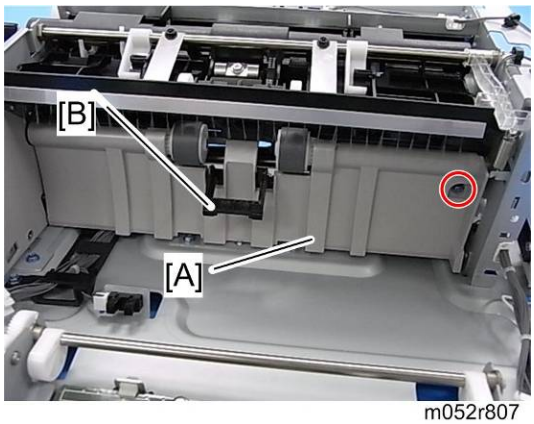
4.14.15 FINISHER EXIT SENSOR

1. Internal finisher (☛p.4-104)
2. Finisher output tray unit (☛ p.4-106)



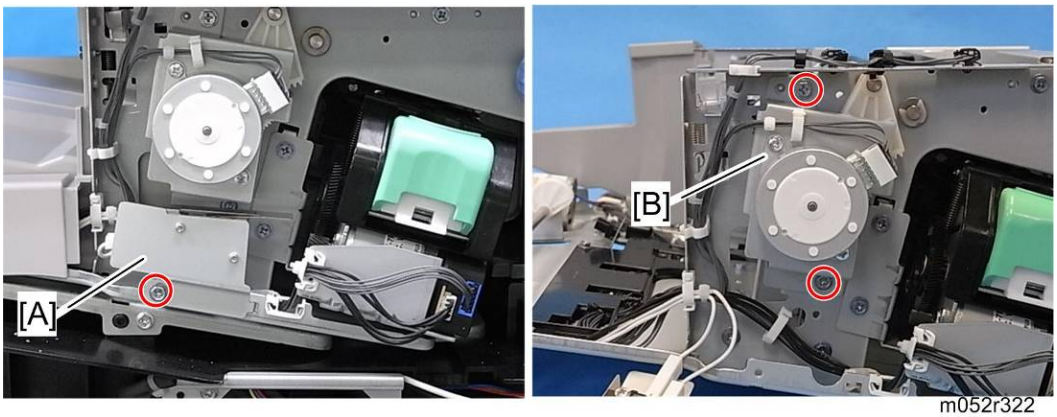
m022r806

3. Finisher top front cover [A] (x 1).



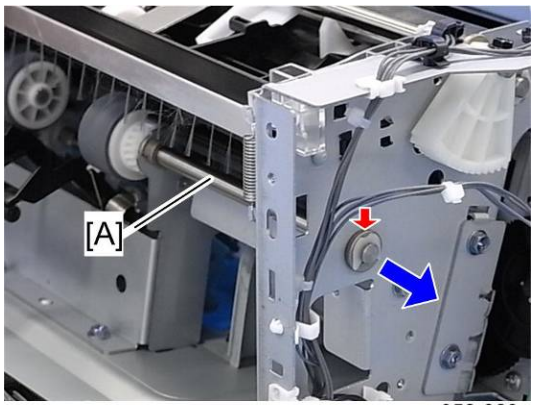
m052r807

4. Paper exit cover [A] (x 1)
   - Pull up the paper sensor actuator [B] when removing the guide plate.



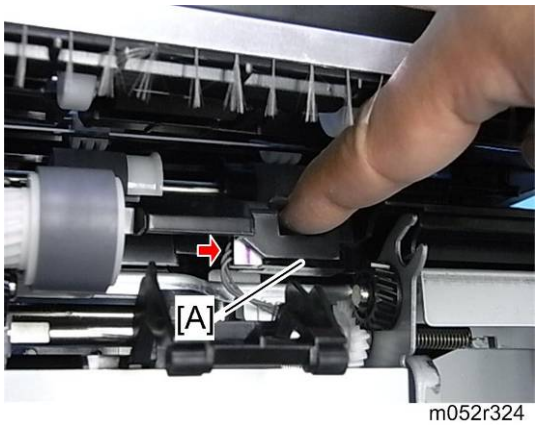
m052r322

5. Stapler door switch bracket [A] (x 1)
6. Exit guide plate motor bracket [B] (x 2)



m052r323

7. Paper exit roller shaft [A] (x 1, bushing x 2)

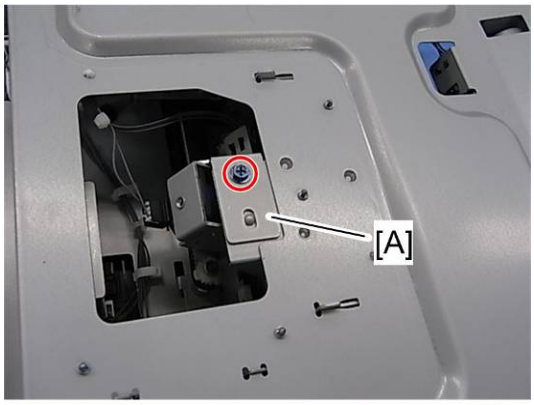


m052r324

8. Finisher paper exit sensor [A] (hooks, x1)

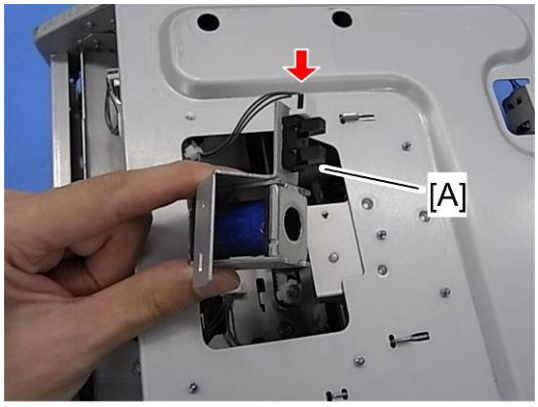
4.14.16 FINISHER PAPER SENSOR

1. Internal finisher (☛ p.4-104)



m022r800

2. Finisher paper sensor bracket [A] (x 1)

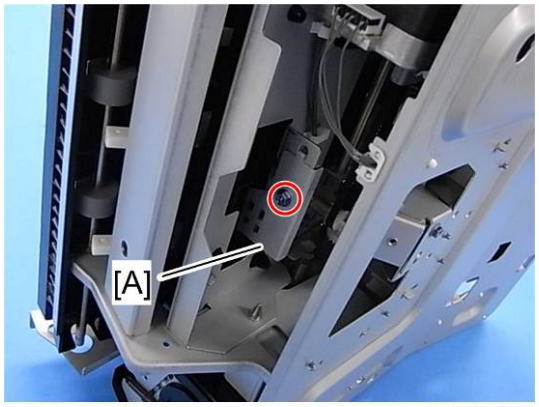


m022r801

3. Finisher paper sensor [A] (x 1, hooks)

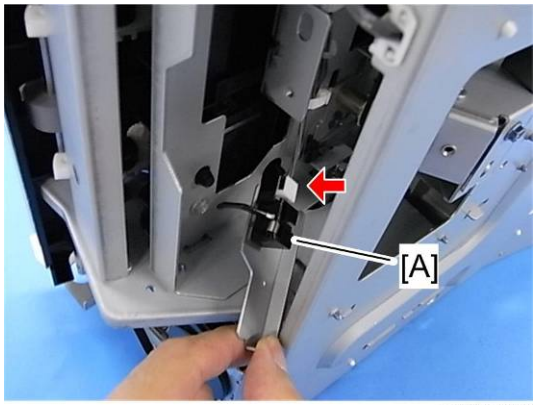
4.14.17 STAPLE TRAY PAPER SENSOR

1. Internal finisher (☛p.4-104)



m022r802

2. Staple tray paper sensor bracket [A] (x 1)

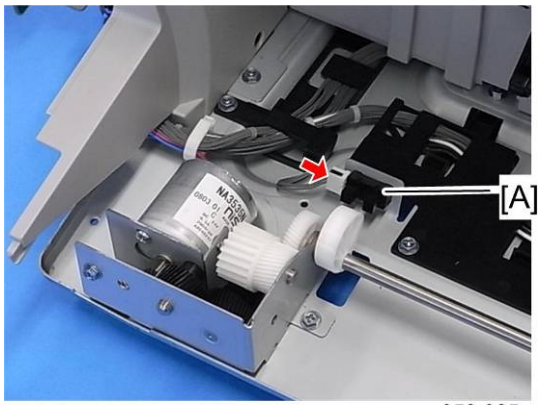


m022r803

3. Staple tray paper sensor [A] (x 1, hooks)

4.14.18 TRAY LOWER LIMIT SENSOR

1. Internal finisher (☛p.4-104)
2. Finisher output tray unit (☛p.4-106)

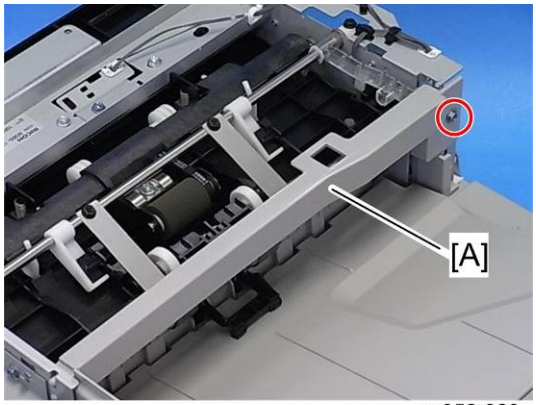


m052r325

3. Tray lower limit sensor [A] (☞ x 1, hooks).

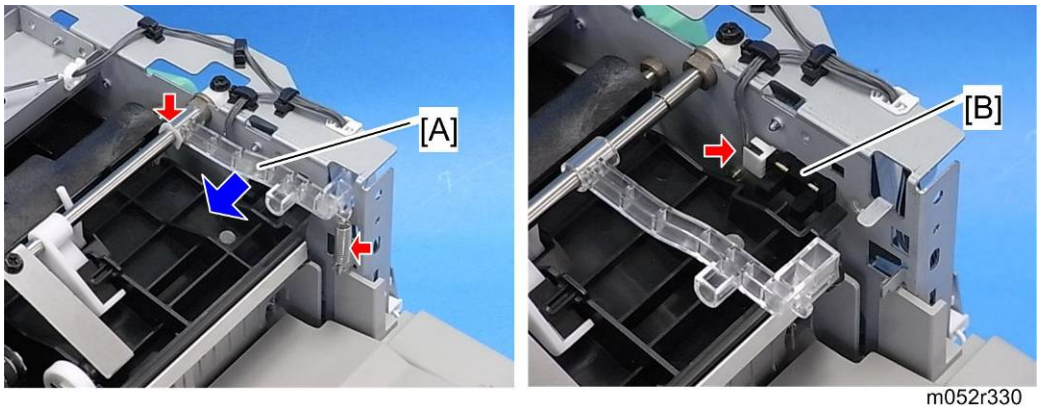
4.14.19 EXIT GUIDE PLATE HP SENSOR

1. Internal finisher (☛p.4-104)



m052r329

2. Finisher top front cover [A]

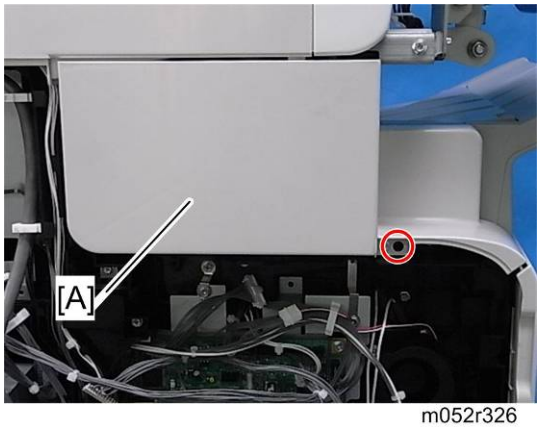


m052r330

3. Slide the exit guide plate stopper [A] to the left (☞ x 1, spring x 1).
4. Exit guide plate HP sensor [B] (hooks, ☞ x 1)

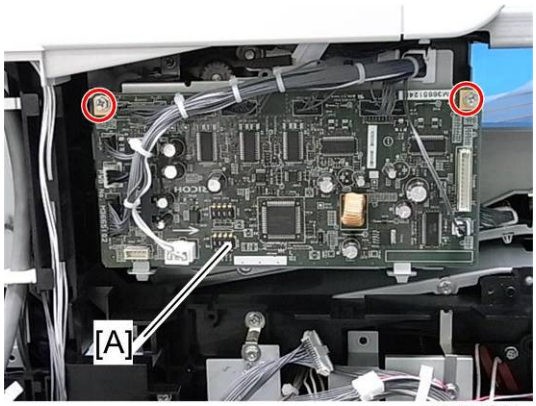
4.14.20 FINISHER MAIN BOARD

1. Left cover (☛p.4-11)



m052r326

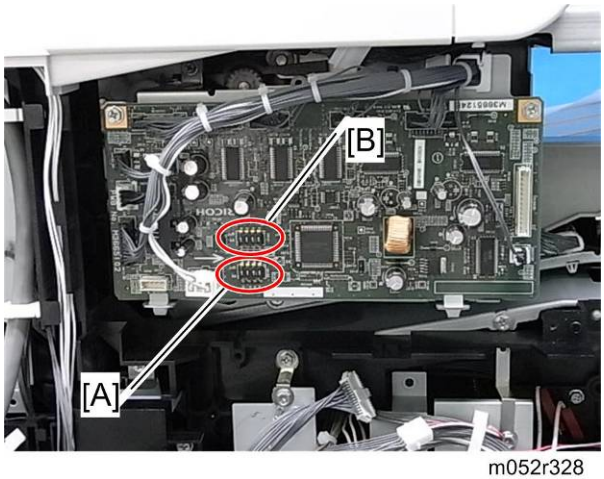
2. Finisher left cover [A] (x 1)



m052r327

3. Finisher main board [A] (x 2, x all)

When reinstalling a new finisher main board



m052r328

Check the DIP switches (SW100: [A], SW101: [B]) on the old main board. If the settings on the new finisher main board are different from the old finisher main board, change the settings on the new board (they must be the same as the settings on the old board).

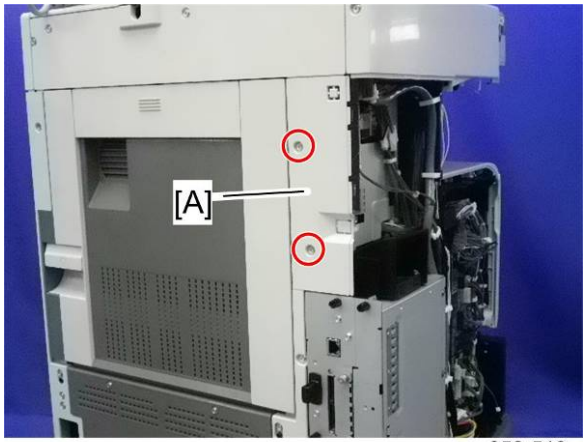
4.15 1 BIN TRAY UNIT

Note

- This section is for the fax and 1 bin tray unit model (M053).

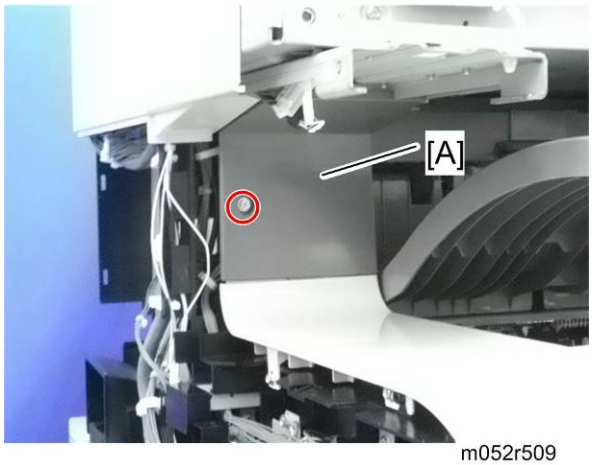
4.15.1 1 BIN TRAY UNIT

1. Left cover (☛p.4-11)
2. Right cover (☛p.4-12)
3. Scanner front cover (☛p.4-22)
4. Scanner left cover (☛p.4-23)



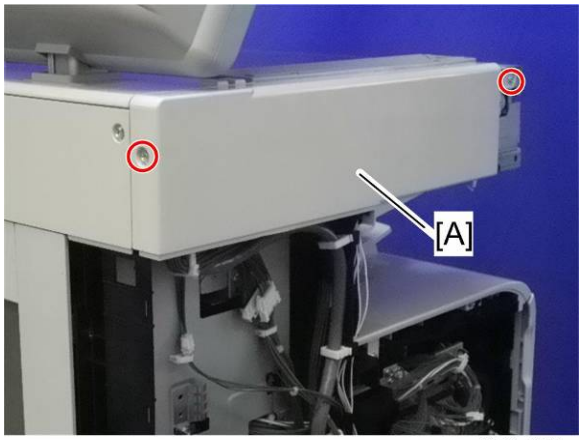
m052r510

5. Rear left middle cover [A] (x 2)



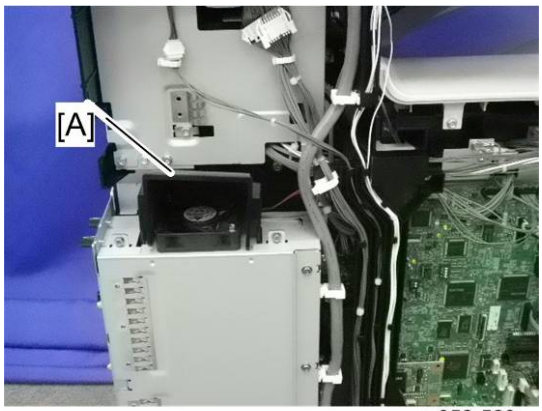
m052r509

6. Inner left cover [A] (x 1)



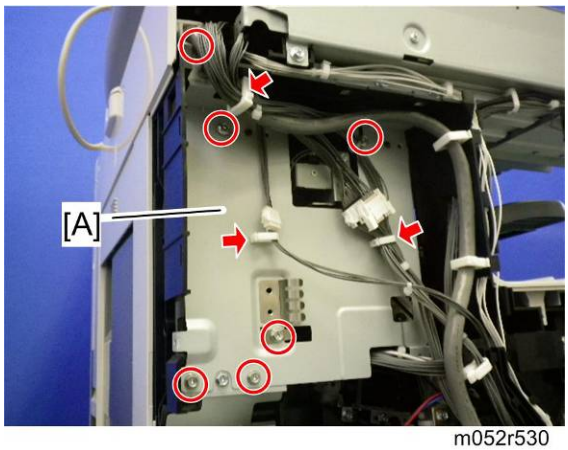
m052r528

7. Scanner left cover (x 2)



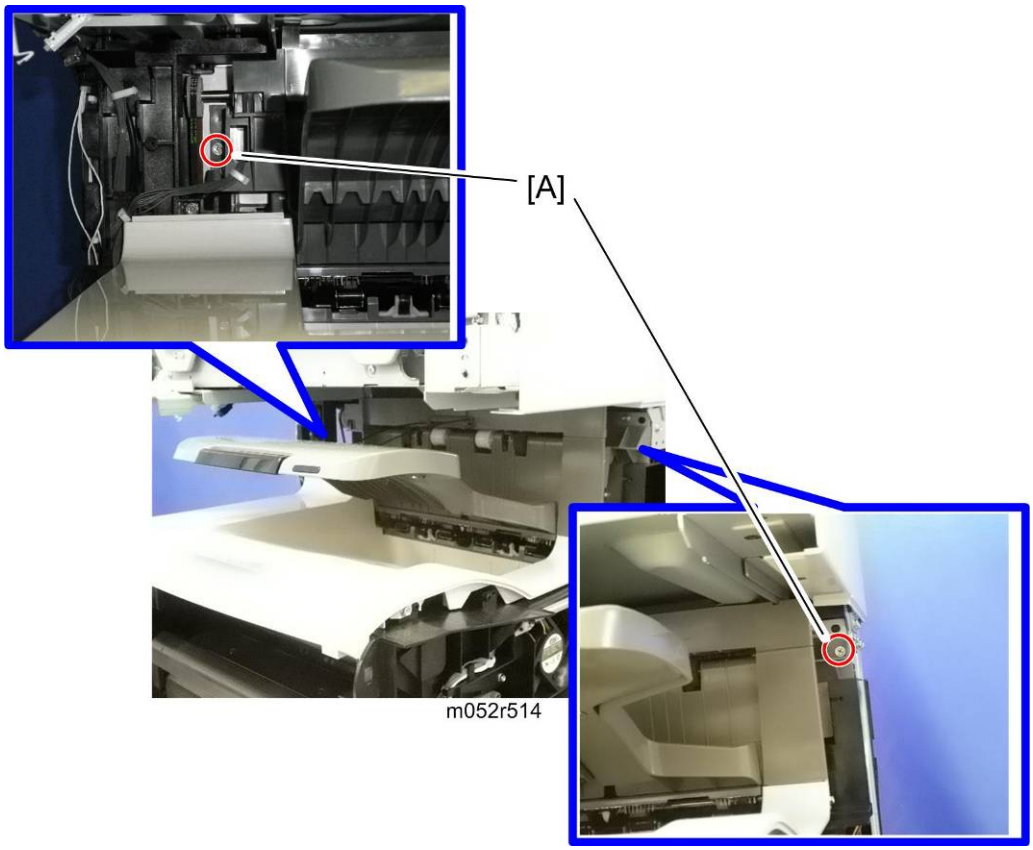
m052r529

8. Controller fan duct [A] (hooks)



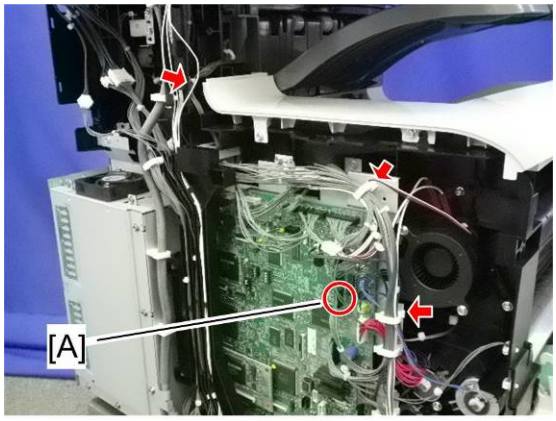
m052r530

9. Bracket (x 6, x 3)



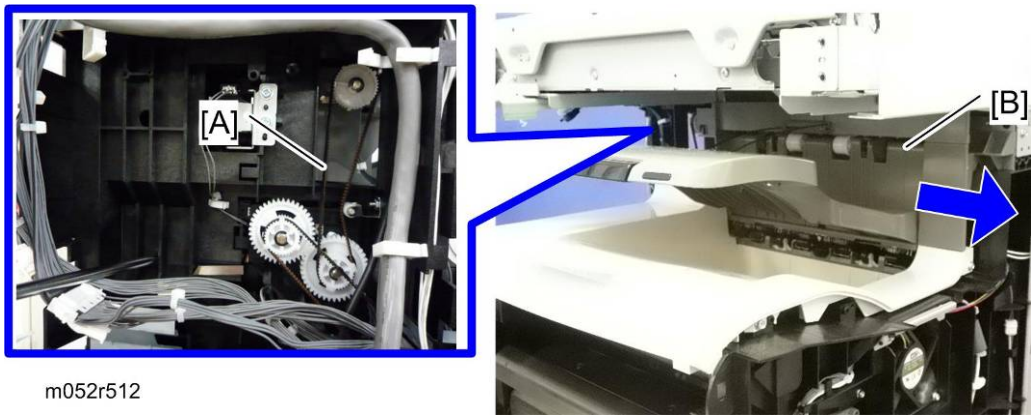
m052r514

10. Remove two screws [A].



m052r531

11. Disconnect the harness [A] from the CN232 on the BICU.



m052r512

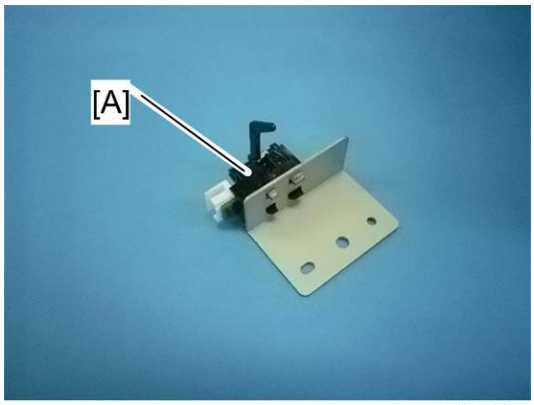
12. Remove the timing belt [A].
13. Slide the bin tray unit [B] to the left.

4.15.2 1 BIN TRAY PAPER EXIT SENSOR

1. 1 bin tray unit (☛p.4-126)

m052r532

2. Sensor bracket [A] (x1, x 1)

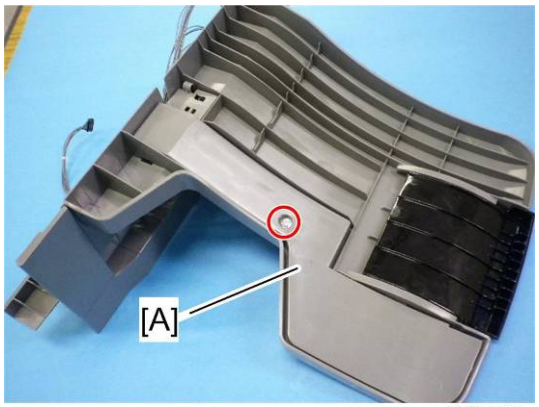


m052r533

3. 1 bin tray paper exit sensor [A] (hooks)

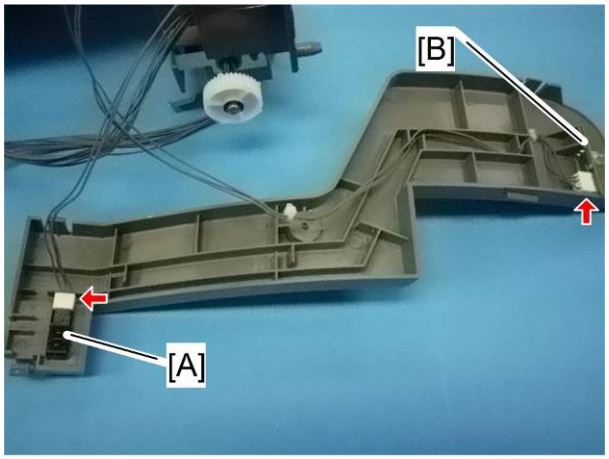
4.15.3 1 BIN TRAY PAPER SENSOR AND LED BOARD

1. 1 bin tray unit (☛p.4-126)



m052r534

2. 1 bin unit bottom cover [A] (x 1, hooks)



m052r535

3. 1 bin tray paper sensor [A] (hooks, x 1)
4. 1 bin tray LED board [B] (x 1)

SYSTEM MAINTENANCE REFERENCE

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

5. SYSTEM MAINTENANCE REFERENCE

5.1 SERVICE PROGRAM

Important

- Do not let the user access the SP mode or the SSP mode. Only service representatives are allowed to access these modes. The machine operation is NOT guaranteed after any person other than service representatives accesses the SP mode.
- Make sure that the data-in LED (⇦) is not on before you go into the SP mode. This LED indicates that some data is coming to the machine. When the LED is on, wait for the copier to process the data.

5.1.1 USING SP AND SSP MODES

The following two modes are available:

- SP Mode (Service Program Mode): The SP Mode includes the programs that are necessary for standard maintenance work. To enter the SP mode, consult your supervisor.
- SSP Mode (Special SP Mode): The SSP Mode includes SP-Mode programs and some special programs. You need some extra knowledge to use these special programs. For details, consult your supervisor.

5.1.2 TYPES OF SP MODES

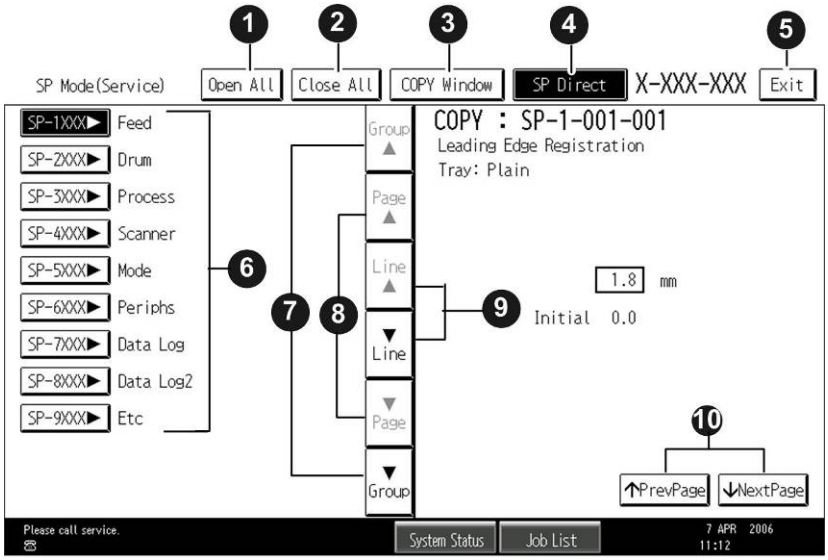
- System SP: SP modes related to the engine functions
- Printer SP: SP modes related to the controller functions
- Scanner SP: SP modes related to the scanner functions
- Fax SP: SP modes related to the fax functions

Select one of the Service Program modes (System, Printer, Scanner, or Fax) from the touch panel as shown in the diagram below after you access the SP mode. This section explains the functions of the System/Printer/Scanner SP modes. Refer to the Fax service manual for the Fax SP modes.

b230s910

SP Mode Button Summary

Here is a short summary of the touch-panel buttons.



b230s911

1	Opens all SP groups and sublevels.
2	Closes all open groups and sublevels and restores the initial SP mode display.
3	Opens the copy window (copy mode) so you can make test copies. Press SP Mode (highlighted) in the copy window to return to the SP mode screen,
4	Enter the SP code directly with the number keys if you know the SP number. Then press #. (The required SP Mode number will be highlighted when pressing #. If not, just press the required SP Mode number.)

5	Press two times to leave the SP mode and return to the copy window to resume normal operation.
6	Press any Class 1 number to open a list of Class 2 SP modes.
7	Press to scroll the show to the previous or next group.
8	Press to scroll to the previous or next display in segments the size of the screen display (page).
9	Press to scroll the show the previous or next line (line by line).
10	Press to move the highlight on the left to the previous or next selection in the list.

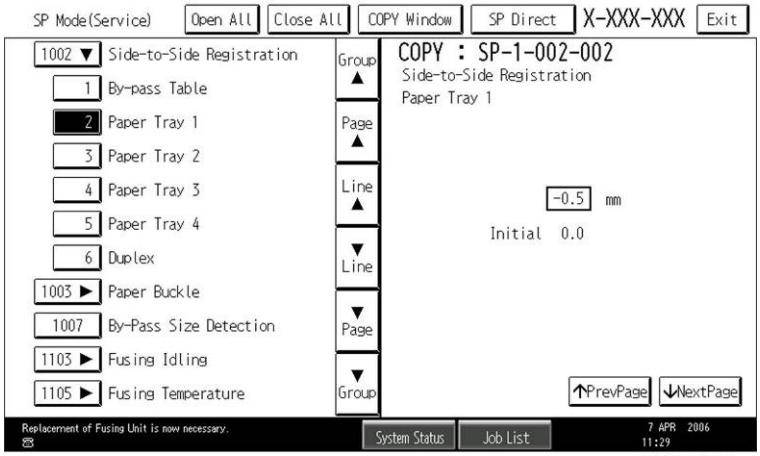
Switching Between SP Mode and Copy Mode for Test Printing

1. In the SP mode, select the test print. Then press "Copy Window".
2. Use the copy window (copier mode), to select the appropriate settings (paper size, etc.) for the test print.
3. Press Start to start the test print.
4. Press SP Mode (highlighted) to return to the SP mode screen and repeat from step 1.

Selecting the Program Number

Program numbers have two or three levels.

1. Refer to the Service Tables to find the SP that you want to adjust before you begin.
2. Press the Group number on the left side SP Mode window that contains the SP that you want to adjust.
3. Use the scrolling buttons in the center of the SP mode window to show the SP number that you want to open. Then press that number to expand the list.
4. Use the center touch-panel buttons to scroll to the number and title of the item that you want to set and press it. The small entry box on the right activates and shows the below default or the current settings.



b230s912

Note

- Refer to the Service Tables for the range of allowed settings.

5. Do this procedure to enter a setting:
   - Press ⊙ to toggle between plus and minus and use the keypad to enter the appropriate number. The number you enter writes over the previous setting.
   - Press # to enter the setting. (The value is not registered if you enter a number that is out of range.)
   - Press "Yes" when you are prompted to complete the selection.
6. If you need to perform a test print, press Copy Window to open the copy window and select the settings for the test print. Press Start ◇ and then press SP Mode (highlighted) in the copy window to return to the SP mode display.
7. Press Exit two times to return to the copy window when you are finished.

Exiting Service Mode

Press the Exit key on the touch-panel.

Service Mode Lock/Unlock

At locations where the machine contains sensitive data, the customer engineer cannot operate the machine until the Administrator turns the service mode lock off. This function makes sure that work on the machine is always done with the permission of the Administrator.

1. If you cannot go into the SP mode, ask the Administrator to log in with the User Tool and then set "Service Mode Lock" to OFF after he or she logs in:
   User Tools > System Settings > Administrator Tools > Service Mode Lock > OFF
   - This unlocks the machine and lets you get access to all the SP codes.
   - The CE can service the machine and turn the machine off and on. It is not necessary to ask the Administrator to log in again each time the machine is turned on.
2. Go into the SP mode and set SP5169 to "1" if you must use the printer bit switches.
3. After machine servicing is completed:

- Change SP5169 from "1" to "0".
- Turn the machine off and on. Tell the administrator that you have completed servicing the machine.
- The Administrator will then set the "Service Mode Lock" to ON.

5.1.3 REMARKS

Display on the Control Panel Screen

The maximum number of characters which can show on the control panel screen is limited to 30 characters. For this reason, some of the SP modes shown on the screen need to be abbreviated. The following are abbreviations used for the SP modes for which the full description is over 20 characters.

<table>
<tr><td colspan="2">Paper Weight
Thin paper: 52-59 g/m^2
Plain Paper: 60-90 g/m^2, 16-24lb.
Middle Thick: 91-105 g/m^2, 24-28lb.
Thick Paper 1: 106-169 g/m^2, 28.5-44.9lb.
Thick Paper 2: 170-220 g/m^2, 45-58lb.
Thick Paper 3: 221-256 g/m^{2,} 59-68lb</td></tr>
<tr><td>Paper Type
N: Normal paper
MTH: Middle thick paper
TH: Thick paper</td><td>Paper Feed Station
P: Paper tray
B: By-pass table</td></tr>
<tr><td colspan="2">Color Mode [Color]
[K]: Black in B&W mode
[Y], [M], or [C]: Yellow, Magenta, or Cyan in Full Color mode
[YMC]: Only for Yellow, Magenta, and Cyan
[FC]: Full Color mode
[FC, K], [FC, Y], [FC, M], or [FC, C]: Black, Yellow, Magenta, or Cyan in full color mode</td></tr>
<tr><td>Print Mode
S: Simplex
D: Duplex</td><td>Process Speed
L: Low speed
M: Medium speed
H: High speed</td></tr>
</table>

Others

The following symbols are used in the SP mode tables.

FA: Factory setting

(Data may be adjusted from the default setting at the factory. Refer to the factory setting sheets enclosed. You can find it under the jammed paper removal decal.)

DFU: Design/Factory Use only

Do not touch these SP modes in the field.

A sharp (#) to the right hand side of the mode number column means that the main switch must be turned off and on to effect the setting change.

An asterisk (*) to the right hand side of the mode number column means that this mode is stored in the NVRAM. If you do a RAM clear, this SP mode will be reset to the default value.

"ENG" and "CTL" show which NVRAM contains the data.

- ENG: NVRAM on the BICU board
- CTL: NVRAM on the controller board

The settings of each SP mode are explained in the right-hand column of the SP table in the following way.

[Adjustable range / **Default setting** / Step] Alphanumeric

- If "Alphanumeric" is written to the right of the bracket as shown above, the setting of the SP mode shows on the screen using alphanumeric characters instead of only numbers. However, the settings in the bracket in the SP mode table are explained by using only the numbers.

SSP: This denotes a "Special Service Program" mode setting.

5.2 SYSTEM SP1-XXX

5.2.1 SP1-XXX (FEED)

1001	[Leading Edge Registration] Leading Edge Registration Adjustment (Tray Location, Paper Type), Paper Type -> Plain, Thick 1, Thick 2, Thick3 or Thin		
	Adjusts the leading edge registration by changing the registration motor operation timing for each mode. Increasing a value: an image is moved to the trailing edge of paper. Decreasing a value: an image is moved to the leading edge of paper.		
001	By-pass:Plain	*ENG	[–50 to 50 / **0** / 0.1 mm/step]
002	By-pass: Thick1	*ENG	
003	By-pass: Thick2	*ENG	
004	By-pass: Thick3	*ENG	
005	By-pass: Thin	*ENG	
006	Tray1:Plain	*ENG	[–50 to 50 / **0** / 0.1 mm/step]
007	Tray1:Thick1	*ENG	
008	Tray1:Thick2	*ENG	
009	Tray1:Thick3	*ENG	
010	Tray1:Thin	*ENG	
011	Tray2:Plain	*ENG	[–50 to 50 / **0** / 0.1 mm/step]
012	Tray2:Thick1	*ENG	
013	Tray2:Thick2	*ENG	
014	Tray2:Thick3	*ENG	
015	Tray2:Thin	*ENG	
016	Tray3:Plain	*ENG	[–50 to 50 / **0** / 0.1 mm/step]

017	Tray3:Thick1	*ENG	
018	Tray3:Thick2	*ENG	
019	Tray3:Thick3	*ENG	
020	Tray3:Thin	*ENG	
021	Tray4:Plain	*ENG	[–50 to 50 / **0** / 0.1 mm/step]
022	Tray4:Thick1	*ENG	
023	Tray4:Thick2	*ENG	
024	Tray4:Thick3	*ENG	
025	Tray4:Thin	*ENG	
026	Duplex:Plain	*ENG	[–50 to 50 / **0** / 0.1 mm/step]
027	Duplex:Thick1	*ENG	
028	Duplex:Thick2	*ENG	

1002	[Side-to-Side Registration]		
	Adjusts the side-to-side registration by changing the laser main scan start position for each mode and tray. Increasing a value: an image is moved to the rear edge of paper. Decreasing a value: an image is moved to the front edge of paper.		
001	By-pass	*ENG	[–50 to 50 / **0.0** / 0.1 mm/step]
002	Tray 1	*ENG	
003	Tray 2	*ENG	
004	Tray 3	*ENG	
005	Tray 4	*ENG	
006	Duplex	*ENG	

1003	[Paper Buckle] Paper Buckle Adjustment (Tray Location, Paper Type), Paper Type -> Plain, Thick 1, Thick 2, Thick3 or Thin		
	Adjusts the amount of paper buckle at the registration roller by changing the paper feed timing.		
001	By-pass:Plain	*ENG	[-70 to 70 / **0** / 0.1 mm/step]
002	By-pass: Thick1	*ENG	
003	By-pass: Thick2	*ENG	
004	By-pass: Thick3	*ENG	
005	By-pass: Thin	*ENG	
006	Tray1:Plain	*ENG	[-70 to 70 / **0** / 0.1 mm/step]
007	Tray1:Thick1	*ENG	
008	Tray1:Thick2	*ENG	
009	Tray1:Thick3	*ENG	
010	Tray1:Thin	*ENG	
011	Tray2:Plain	*ENG	[-70 to 70 / **0** / 0.1 mm/step]
012	Tray2:Thick1	*ENG	
013	Tray2:Thick2	*ENG	
014	Tray2:Thick3	*ENG	
015	Tray2:Thin	*ENG	
016	Tray3:Plain	*ENG	[-70 to 70 / **0** / 0.1 mm/step]
017	Tray3:Thick1	*ENG	
018	Tray3:Thick2	*ENG	
019	Tray3:Thick3	*ENG	
020	Tray3:Thin	*ENG	
021	Tray4:Plain	*ENG	[-70 to 70 / **0** / 0.1 mm/step]

022	Tray4:Thick1	*ENG	
023	Tray4:Thick2	*ENG	
024	Tray4:Thick3	*ENG	
025	Tray4:Thin	*ENG	
026	Duplex:Plain	*ENG	[-70 to 70 / **0** / 0.1 mm/step]
027	Duplex:Thick1	*ENG	
028	Duplex:Thick2	*ENG	

1103	[PreRotate Temp] Fusing Pre-rotation Temperature		
001	-	*ENG	[0 to 180 / **150** / 1°C /step]
	Specifies the temperature for the fusing pre-rotation.		

1105	[Fusing Temperature] Fusing Temperature Adjustment		
	(Printing Mode, Paper Type, Simplex/Duplex)		
001	Reload Temp	*ENG	[100 to 180 / **135** / 1 deg/step]
	Specifies the hot roller target temperature for the ready condition.		
002	Stand-by Temp	*ENG	[140 to 205 / **175** / 1 deg/step]
	Specifies the hot roller target temperature for the standby condition.		
010	Print:Plain	*ENG	[150 to 215 / **200** / 1 deg/step]
	Specifies the hot roller target temperature for the plain paper feeding condition.		
011	Print:Thin	* ENG	[150 to 215 / **170** / 1 deg/step]
	Specifies the hot roller target temperature for the thin paper feeding condition.		
012	Print:Thick	* ENG	[150 to 215 / **195** / 1 deg/step]
	Specifies the hot roller target temperature for the thick paper feeding condition.		

013	Print:Small Size	* ENG	[150 to 215 / **190** / 1 deg/step]
	Specifies the hot roller target temperature for the small paper feeding condition.		
100	Ready:LL	*ENG	[140 to 205 / **200** / 1 deg/step]
	Specifies the hot roller target temperature after the ready condition in low temperature and low humidity condition.		
101	Ready:MM	*ENG	[140 to 205 / **200** / 1 deg/step]
	Specifies the hot roller target temperature after the ready condition in medium temperature and medium humidity condition.		
102	Ready:HH	*ENG	[140 to 205 / **195** / 1 deg/step]
	Specifies the hot roller target temperature after the ready condition in high temperature and high humidity condition.		
103	Ready:T AL	*ENG	[140 to 205 / **175** / 1 deg/step]
	Specifies the hot roller target temperature for the plain paper feeding condition in low temperature condition (absolute temperature).		
104	Ready:T AM	*ENG	[140 to 205 / **195** / 1 deg/step]
	Specifies the hot roller target temperature for the plain paper feeding condition in medium temperature condition (absolute temperature).		
105	Ready:T AH	*ENG	[140 to 205 / **190** / 1 deg/step]
	Specifies the hot roller target temperature for the plain paper feeding condition in high temperature condition (absolute temperature).		

1159	[Fusing Jam]		
001	SC Detection	*ENG	[0 or 1 / **0** / 1]
	Enables or disables the fusing consecutive jam (three times) SC detection. 0: Off, 1: On		

1902	[OHP Clutch Rotate]		
001	-	*ENG	[1 or 2 / **1** / 1/step]

5.3 SYSTEM SP2-XXX

5.3.1 SP2-XXX (DRUM)

2001	[Charge Roller Bias]		
	Adjusts the reference voltage for the charge roller bias.		
001	-	*ENG	[1000 to 2000 / **1550** / 1 V/step]

2112	[Main-scan Mag] Main-scan Maginification Adjustment		
	Adjusts the magnification rate in the main-scan direction.		
001	-	*ENG	[-5 to 5 / **0** / 0.1%/step]

2113	[Sub-scan Mag] Sub-scan Maginification Adjustment		
	Adjusts the magnification rate in the sub-scan direction.		
001	-	*ENG	[-5 to 5 / **0** / 0.1%/step]

2201	[DV Roller Bias] Development DC Bias Adjustment		
	Adjusts the reference voltage for the development roller bias.		
001	-	*ENG	[100 to 800 / **600** / 1 V/step]

2301	[Transfer Current Adj] Transfer Roller Current Adjustment		
001	-	*ENG	[-3 to 3 / **0** / 1 μA]
	Adjusts the current for the transfer roller.		

<table>
<tr><td rowspan="2">2902</td><td colspan="3">[Test Pattern]</td></tr>
<tr><td colspan="3">Selects a test pattern.
To print a test patter, press "Copy Window" button on the LCD and then press "Start" button on the operation panel.</td></tr>
<tr><td rowspan="2">003</td><td>Pattern Selection</td><td>-</td><td>[0 to 30 / 0 / 1/step]</td></tr>
<tr><td colspan="2">0 None
1: Vertical Line (1dot)
2: Vertical Line (2dot)
3: Horizontal (1dot)
4: Horizontal (2dot)
5: Grid Vertical Line
6: Grid Horizontal Line
7: Grid pattern Small
8: Grid pattern Large
9: Argyle Pattern Small
10: Argyle Pattern Large
11. Independent Pattern (1dot)
12. Independent Pattern (2dot)
13. Independent Pattern (4dot)
14. Trimming Area
15: Hound's Tooth Check (Vertical)</td><td>16: Hound's Tooth Check (Horizontal)
17: Band (Horizontal)
18: Band (Vertical)
19: Checker Flag Pattern
20: Density Pattern
21: Full Dot Pattern
22: Full White Pattern
23: Grayscale Horizontal
24: Grayscale (Horizontal Margin)
25: Grayscale Vertical
26: Grayscale (Vertical Margin)
27: Grayscale
28: Grayscale (Margin)
29: Grayscale Grid
30: Grayscale (Grid Margin)</td></tr>
</table>

5.4 SYSTEM SP3-XXX

5.4.1 SP3-XXX (PROCESS)

3926	[Filming Prevent]		
001	-	-	[0 or 1 / **0** / 1 /step] 0: Off, 1: On
	Turns on or off the filiming prevention.		

5.5 SYSTEM SP4-XXX

5.5.1 SP4-XXX (SCANNER)

4008	[Sub Scan Magnification Adj.]		
	Adjusts the sub-scan magnification by changing the scanner motor speed.		
001	-	*ENG	[-1.0 to 1.0 / **0** / 0.1%/step] **FA**

4010	[Leading Edge Registration Adj]		
	Adjusts the leading edge registration by changing the scanning start timing in the sub-scan direction.		
001	-	*ENG	[-2.0 to 2.0 / **0** / 0.1 mm/step] **FA**

4011	[Main Scan Regist]		
	Adjusts the side-to-side registration by changing the scanning start timing in the main scan direction.		
001	-	*ENG	[-2.5 to 2.5 / **0** / 0.1 mm/step] **FA**

4012	[Scale Edge Mask]		
	Sets the blank margin at each side for erasing the original shadow caused by the gap between the original and the scale. L: Leading, T: Trailing, R: Rear, F: Front		
001	Book: Sub LEdge	*ENG	[0 to 3.0 / **0** / 0.1 mm/step] **FA**
002	Book: Sub TEdge		
003	Book: Main REdge		
004	Book: Main FEdge		

4013	[Scanner Free Run]		
	Performs the scanner free run with the exposure lamp on or off in the following mode. Full color mode / Full Size / A4 or LT		
001	Lamp: OFF	*ENG	OFF or ON
002	Lamp: ON		

4014	[Scan]		
	Execute the scanner free fun with each mode.		
001	HP Detection Enable	-	Scanner free run with HP sensor check.
002	HP Detection Disable	-	Scanner free run without HP sensor check.

4020	[Dust Check]		
001	Dust Detect: On/Off	*ENG	Turns the DF scan glass dust check on/ off. [0 or 1 / **0** / 1 /step] 0: OFF, 1: ON
002	Dust Detect: Lvl	*ENG	Selects the detect level. [0 to 8 / **4** / 1 /step] 0: lowest detection level 8: highest detection level
003	Dust Correct: Lvl	*ENG	Selects the level of the sub scan line correction when using the ARDF. [0 to 4 / **0** / 1 /step] 0: Off 1: Weakest 2: Weak 3: Strong 4: Strongest

4400	[Original Edge Mask]	*ENG	
	Set the Mask for Original. These SPs set the area to be masked during platen (book) mode scanning. L: Leading, T: Trailing, R: Rear, F: Front		
001	Book: Sub LEdge	[0 to 3.0 / **0** / 0.1 mm/step]	
002	Book: Sub TEdge		
003	Book: Main REdge		
004	Book: Main FEdge		
005	ADF: Sub LEdge		
007	ADF: Main REdge		
008	ADF: Main FEdge		

4417	[IPU Test Pattern]	
	Selects the IPU test pattern.	
001	Test Pattern	[0 to 28 / **0** / 1/step]
	0: Scanned image 1: Gradation main scan A 2: Gradation main scan B 3: Gradation main scan C 4: Gradation main scan D 5: Gradation sub scan (1) 6: Grid pattern (1) 7: Slant grid pattern 8: Gradiation sub scan (2) 9: Gradiation sub scan (3) 10: Patch 16 (1) 11: Patch 16 (2) 12: Patch 64 13: Grid pattern (2) 14: Patch	15: Gray pattern (1) 16: Gray pattern (2) 17: Gray Pattern (3) 18: Shading pattern 19: Thin line pattern 20: Scanned + Grid pattern 21: Scanned + Gray scale 22: Scanned + Patch 23: Scanned + Slant Grid C 24: Scanned + Slant Grid D 25: Gray scale 18 (txt) 26: Gray scale 18 (pht) 27: Gray scale 18 (txt): r-Linear 28: Gray scale 18 (pht): r-Linear

4429	[Select Copy Data Security]		
001	Copying	*ENG	[0 to 3 / **3** / 1 /step]
002	Scanning		
003	Fax Operation		

4450	[Scan Image Path Selection]	
001	Black Subtraction ON/OFF	[0 or 1 / **1** / -] 0: OFF, 1: ON
	Uses or does not use the black reduction image path.	
002	SH ON/OFF	[0 or 1 / **0** / 1 /step] 0: ON, 1: OFF
	Uses or does not use the shading image path.	

4460	[Degital AE]		
	Adjust the background level.		
001	Low Limit Value	*ENG	[0 to 1023 / **364** / 1 /step]
002	Background Level		[512 to 1535 / **932** / 1 /step]

4540	[Print Coverage]		
	This SP corrects the print coverage of 12 hues (RY, YR, YG, etc. x 4 Colors [R, G, B, Option]) for a total of 48 parameters.		
001-004	RY Phase: Option/R/G/B	*ENG	Specifies the printer vector correction value. [0 to 255 / **0** / 1 /step]
005-008	YR Phase: Option/R/G/B	*ENG	
009-012	YG Phase: Option/R/G/B	*ENG	
013-016	GY Phase: Option/R/G/B	*ENG	
017-020	GC Phase: Option/R/G/B	*ENG	
021-024	CG Phase: Option/R/G/B	*ENG	
025-028	CB Phase: Option/R/G/B	*ENG	

029-032	BC Phase: Option/R/G/B	*ENG	
033-036	BM Phase: Option/R/G/B	*ENG	
037-040	MB Phase: Option/R/G/B	*ENG	
041-044	MR Phase: Option/R/G/B	*ENG	
045-048	RM Phase: Option/R/G/B	*ENG	
049-052	WHITE: Option/R/G/B	*ENG	
053-056	BLACK: Option/R/G/B	*ENG	

4550	[Scanner Appl.:Text/Print] **DFU**

4551	[Scanner Appl.: Text] **DFU**

4552	[Scanner Appl.:Txt Dropout] **DFU**

4553	[Scanner Appl.:Text/Photo] **DFU**

4554	[Scanner Appl.: Photo] **DFU**

4565	[Scanner Appl.: GrayScale] **DFU**

4570	[Scan Appl.: Color: Text/Photo] **DFU**

4571	[Scan Appl.: Color: Glossy Photo] **DFU**

4572	[Scan Appl.: AutoColor] **DFU**

4580	[FAX Appl.: Text/Chart] **DFU**

4581	[FAX Appl.: Text] **DFU**

4582	[FAX Appl.: Text/Photo] **DFU**

4583	[FAX Appl.: Photo] **DFU**

4584	[FAX Appl.: Original 1] **DFU**

4585	[FAX Appl.: Original 2] **DFU**

4600	[SBU Version Display]		
001	SBU ID	-	Displays the ID of the SBU.
002	GASBU-N ID	-	Displays the ID of the GASBU.
003	VSP5100 ID	-	Displays t he ID of the VSP5100.

4602	[Scanner Memory Access]		
001	Scanner Memory Access	-	Enables the read and write check for the SBU registers.

4603	[AGC Execution]		
001	HP Detection Enable	-	Executes the AGC.
002	HP Detection Disable	-	**DFU**

4604	[FGATE Open/Close] **DFU**

4609	[Gray Balance Set: R]		
001	Book Read	-	[-512 to 511 / **-80** / 1 digit/step]
002	DF Read	-	[-512 to 511 / **-80** / 1 digit/step]

4610	[Gray Balance Set: G]		
001	Book Read	-	[-512 to 511 / **-85** / 1 digit/step]
002	DF Read		

4611	[Gray Balance Set: B]		
001	Book Read	-	[-512 to 511 / **-80** / 1 digit/step]
002	DF Read		

4623	[Black Level Adj. Display] RE: Red Even signal, RO: Red Odd signal		
001	Latest: RE Color	-	Displays the black offset value (rough adjustment) for the even red signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]
002	Latest: RO Color	-	Displays the black offset value (rough adjustment) for the odd red signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]

4624	[Black Level Adj. Display] GE: Green Even signal, GO: Green Odd signal		
001	Latest: GE Color	-	Displays the black offset value (rough adjustment) for the even green signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]
002	Latest: GO Color	-	Displays the black offset value (rough adjustment) for the odd green signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]

4625	[Black Level Adj. Display] BE: Blue Even signal, BO: Blue Odd signal		
001	Latest: BE Color	-	Displays the black offset value (rough adjustment) for the even blue signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]
002	Latest: BO Color	-	Displays the black offset value (rough adjustment) for the odd blue signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]

4628	[Analog Gain Adj. Display]		
	Displays the gain value of the amplifiers on the controller for Red.		
001	Latest: RE Color	-	[0 to 7 / **0** / 1 digit/step]

4629	[Analog Gain Adj. Display]		
	Displays the gain value of the amplifiers on the controller for Green.		
001	Latest: GE Color	-	[0 to 7 / **0** / 1 digit/step]

4630	[Analog Gain Adj. Display]		
	Displays the gain value of the amplifiers on the controller for Blue.		
001	Latest: BE Color	-	[0 to 7 / **0** / 1 digit/step]

4631	[Digital Gain Adj. Display]		
	Displays the gain value of the amplifiers on the controller for Red.		
001	Latest: RE Color	-	[0 to 1023 / **0** / 1 digit/step]
002	Latest: RO Color	-	

4632	[Digital Gain Adj. Display]		
	Displays the gain value of the amplifiers on the controller for Green.		
001	Latest: GE Color	-	[0 to 1023 / **0** / 1 digit/step]
002	Latest: GO Color	-	

4633	[Digital Gain Adj. Display]		
	Displays the gain value of the amplifiers on the controller for Blue.		
001	Latest: BE Color	-	[0 to 1023 / **0** / 1 digit/step]
002	Latest: BO Color	-	

4645	[Scan Adjust Error]		
001	White level	-	[0 to 65535 / **0** / 1 digit/step]
002	Black level	-	

4647	[Scanner Hard Error]		
	Displays the result of the SBU connection check.		
001	Power-ON	-	[0 to 35535 / **0** / 1digit /step] 0: OK, Other: SBU connection check failure If the SBU connection check fails, SC144 occurs.

4654	[Black Level Adj. Display] RE: Red Even signal, RO: Red Odd signal		
001	Last Correct Value: RE Color	*ENG	Displays the black offset value for the even red signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]
002	Last Correct Value: RO Color	*ENG	Displays the black offset value for the odd red signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]

4655	[Black Level Adj. Display] GE: Green Even signal, GO: Green Odd signal		
001	Last Correct Value: GE Color	*ENG	Displays the black offset value for the even green signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]
002	Last Correct Value: GO Color	*ENG	Displays the black offset value for the odd green signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]

4656	[Black Level Adj. Display] BE: Blue Even signal, BO: Blue Odd signal		
001	Last Correct Value: BE Color	*ENG	Displays the black offset value for the even blue signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]
002	Last Correct Value: BO Color	*ENG	Displays the black offset value for the odd blue signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]

4658	[Analog Gain Adj. Display]		
	Displays the previous gain value of the amplifiers on the controller for Red.		
001	Last Correct Value: RE Color	*ENG	[0 to 7 / **0** / 1 digit/step]

4659	[Analog Gain Adj. Display]		
	Displays the previous gain value of the amplifiers on the controller for Green.		
001	Last Correct Value: GE Color	*ENG	[0 to 7 / **0** / 1 digit/step]

4660	[Analog Gain Adj. Display]		
	Displays the previous gain value of the amplifiers on the controller for Blue.		
001	Last Correct Value: BE Color	*ENG	[0 to 7 / **0** / 1 digit/step]

4661	[Digital Gain Adj. Display] RE: Red Even signal, RO: Red Odd signal		
001	Last Correct Value: RE Color	*ENG	[0 to 1023 / **0** / 1 digit/step]
002	Last Correct Value: RO Color	*ENG	

4662	[Digital Gain Adj. Display] GE: Green Even signal, GO: Green Odd signal		
001	Last Correct Value: GE Color	*ENG	[0 to 1023 / **0** / 1 digit/step]
002	Last Correct Value: GO Color	*ENG	

4663	[Digital Gain Adj. Display] BE: Blue Even signal, BO: Blue Odd signal		
001	Last Correct Value: BE Color	*ENG	[0 to 1023 / **0** / 1 digit/step]
002	Last Correct Value: BO Color	*ENG	

4673	[Black Level Adj. Display] RE: Red Even signal, RO: Red Odd signal		
001	Factory Setting: RE Color	*ENG	Displays the factory setting values of the black level adjustment for the even red signal in the CCD circuit board (color printing speed).. [0 to 16383 / **0** / 1 digit/step]
002	Factory Setting: RO Color	*ENG	Displays the factory setting values of the black level adjustment for the odd red signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]

4674	[Black Level Adj. Display] GE: Green Even signal, GO: Green Odd signal		
001	Factory Setting: GE Color	*ENG	Displays the factory setting values of the black level adjustment for the even green signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]
002	Factory Setting: GO Color	*ENG	Displays the factory setting values of the black level adjustment for the odd green signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]

4675	[Black Level Adj. Display] BE: Blue Even signal, BO: Blue Odd signal		
001	Factory Setting: BE Color	*ENG	Displays the factory setting values of the black level adjustment for the even blue signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]
002	Factory Setting: BO Color	*ENG	Displays the factory setting values of the black level adjustment for the odd blue signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]

4677	[Analog Gain Adj. Display]		
	Displays the factory setting values of the gain adjustment for Red.		
001	Factory Setting: RE Color	*ENG	[0 to 7 / **0** / 1 digit/step]

4678	[Analog Gain Adj. Display]		
	Displays the factory setting values of the gain adjustment for Green.		
001	Factory Setting: GE Color	*ENG	[0 to 7 / **0** / 1 digit/step]

4679	[Analog Gain Adj. Display]		
	Displays the factory setting values of the gain adjustment for Blue.		
001	Factory Setting: BE Color	*ENG	[0 to 7 / **0** / 1 digit/step]

4680	[Digital Gain Adj. Display]		
	Displays the gain value of the amplifiers on the controller for Red.		
001	Latest: RE Color	*ENG	[0 to 1023 / **0** / 1 digit/step]
002	Latest: RO Color	*ENG	

4681	[Digital Gain Adj. Display]		
	Displays the gain value of the amplifiers on the controller for Green.		
001	Latest: GE Color	*ENG	[0 to 1023 / **0** / 1 digit/step]
002	Latest: GO Color	*ENG	

4682	[Digital Gain Adj. Display]		
	Displays the gain value of the amplifiers on the controller for Blue.		
001	Latest: BE Color	*ENG	[0 to 1023 / **0** / 1 digit/step]
002	Latest: BO Color	*ENG	

4688	[DF Density Adjustment]		
	Adjusts the white shading parameter when scanning an image with the ARDF. Adjusts the density level if the ID of outputs made in the DF and Platen mode is different.		
001	-	*ENG	[50 to 150 / **100** / 1%/ step]

4690	[White Level Peak Read]		
	Displays the peak level of the white level scanning.		
001	RE	-	[0 to 1023 / **0** / 1 digit/step]
002	RO	-	

4691	[White Level Peak Read]		
	Displays the peak level of the white level scanning.		
001	GE	-	[0 to 1023 / **0** / 1 digit/step]
002	GO	-	

4692	[White Level Peak Read]		
	Displays the peak level of the white level scanning.		
001	BE	-	[0 to 1023 / **0** / 1 digit/step]
002	BO	-	

4693	[Black Level Peak Read]		
	Displays the peak level of the black level scanning.		
001	RE	-	[0 to 1023 / **0** / 1 digit/step]
002	RO	-	

4694	[Black Level Peak Read]		
	Displays the peak level of the black level scanning.		
001	GE	-	[0 to 1023 / **0** / 1 digit/step]
002	GO	-	

4695	[Black Level Peak Read]		
	Displays the peak level of the black level scanning.		
001	BE	-	[0 to 1023 / **0** / 1 digit/step]
002	BO	-	

4802	[DF Shading FreeRun]		
001	Lamp OFF	-	Executes the scanner free run of shading movement with exposure lamp on or off. Press "OFF" to stop this free run. Otherwise, the free run lasts.
002	Lamp ON		

4804	[Home Position Operation]		
001	-	-	Executes the scanner HP detection.

4806	[Carriage Move]		
001	-	-	Moves the carriage from the scanner home position. Dust may fall through the DF exposure glass. Therefore, do this SP when you transport the machine a long distance.

4807	[SBU Test Pattern Change]		
001	-	-	[0 to 250 / **0** / 1 /step] 1: Grid pattern 2: Gradation main scan 3: Gradation sub scan 4 to 250: Default (Scanning Image)

4808	[Factory Setting Input] **DFU**		
002	Execution Flag	-	[0 or 1 / **0** / 1 /step]

4810	[PWM] **DFU**

4811	[LED White Level Peak Read] **DFU**

4812	[LED White Level Peak Read] **DFU**

4903	[Image Quality Adj]		
001	I-Dot Erase: Text 0	ENG	[0 to 7 / **0** / 1 /step]
	Select the independent dot erase level for the text image scanning.		
002	I-Dot Erase: Original 0	ENG	[0 to 7 / **0** / 1 /step]
	Select the independent dot erase level for the copied original scanning.		

4905	[Select Gradation Level] **DFU**		
	Changes the parameters for error diffusion.		
001	-	*ENG	[0 to 255 / 0 / 1 /step]

4918	[Manual Gamma Adj] **Not used**		
009	-	-	

4991	[IPU Image Path Select]		
	Selects the image path. Enter the number to be selected using the 10-key pad.		
001	RGB Frame Memory	*ENG	[0 to 11 / **2** / 1 /step]
	0: Scanner input RGB images 1: Scanner I/F RGB images 2: RGB images done by Shading correction (Shading ON, Black offset ON) 3: Shading data 4 to 11: Not used		

4993	[High Light Correction]		
001	Sensitivity Selection	*ENG	Selects the Highlight correction level. [0 to 9 / **4** / 1 /step] 0: weakest sensitivity 9: strongest sensitivity
002	Range Selection	*ENG	Selects the range level of Highlight correction. [0 to 9 / **4** / 1 /step] 0: weakest skew correction, 9: strongest skew correction

4994	[Scan:Text/Photo Detection Level]		
	Selects the definition level between Text and Photo for high compression PDF.		
001	High Compression PDF	*ENG	[0 to 2 / **1** / 1 /step] 0: Text priority 1: Normal 2: Photo priority

4996	[White Paper Detect Level]		
	Adjusts the white paper detect level for fax.		
001	-	*ENG	[0 to 6 / **3** / 1 /step]

5.6 SYSTEM SP5-XXX

5.6.1 SP5-XXX (MODE)

5024	[mm/inch Display Selection]		
	Display units (mm or inch) for custom paper sizes.		
001	-	*CTL	[0 or 1 / **0** / -] 0: mm (Europe/Asia) 1: inch (USA)

5045	[Accounting Counter]		
	Selects the counting method. **NOTE:** The counting method can be changed only once, regardless of whether the counter value is negative or positive.		
001	Counter Method	*CTL	[0 or 1 / **0** / -] 0: Developments 1: Prints

5051	[Toner Refill Detection Display]		
	Enables or disables the toner refill detection display.		
001	-	*CTL	[0 or 1 / **0** / -] Alphanumeric 0: ON 1: OFF

5055	[Display IP Address]		
	Display or does not display the IP address on the operation panel.		
001	-	*CTL	[0 or 1 / **0** / -] 0: OFF 1: ON

5056	[Coverage Counter Display]		
	Display or does not display the coverage counter on the operation panel.		
001	-	*CTL	[0 or 1 / **0** / -] 0: Not display, 1: Display

5061	[Toner Remaining Icon Display Change]		
	Display or does not display the remaining toner display icon on the LCD.		
001	-	*CTL	[0 or 1 / **0** / -] 0: Not display, 1: Display

5062	[Parts Replacement Alert Display]		
	Display or does not display the maintenance kit yield on the LCD.		
001	Maintenance Kit	*CTL	[0 or 1 / **1** / -] 0: No display, 1: Display

5066	[PM Parts Display] Display or does not display the "PM parts" button on the LCD.		
001	-	*CTL	[0 or 1 / **1** / -] 0: No display, 1: Display

5067	[Parts Replacement Operation Type]		
	Selects the service maintenance or user maintenance for the maintenance kit. If the user service is selected, PM alart is displayed on the LCD.		
001	Maintenance Kit	*CTL	[0: Service] or **[1: User]**

5071	[Set Bypass Paper Size Display] Display or does not display the by-pass paper size on the LCD.		
001	-	*CTL	[0 or 1 / **0** / -] 0: No display, 1: Display

5113	[Optional Counter Type]		
001	Default Optional Counter Type	*CTL	This program specifies the counter type. **0**: **None**, 1: Key card (RK 3, 4) 2: Key card (down), 3: Prepaid card 4: Coin rack, 5: MF key card 8: Key counter + Vendor 9: Bar-code Printer
002	External Optional Counter Type	*CTL	This program specifies the external counter type. **0**: **None** 1: Expansion Device 1 2: Expansion Device 2 3: Expansion Device 3

5114	[Optional Counter I/F]		
001	MF Key Card Extension	*CTL	[**0: Not installed/** 1: Installed (scanning accounting)]

5118	[Disable Copying]	*CTL	[**0**: Not disabled/ 1: Disabled]
001	This program disables copying.		

5120	[Mode Clear Opt. Counter Removal]	*CTL	[**0**: **Yes (removed)**/ 1: Standby (installed but not used)/ 2: No (not removed)]
001	This program updates the information on the optional counter. When you install or remove an optional counter, check the settings.		

5121	[Counter Up Timing]	*CTL	[**0: Feed**/ 1: Exit]
001	This program specifies when the counter goes up. The settings refer to "paper feed" and "paper exit" respectively.		

5127	[APS Mode]	*CTL	[**0**: Not disabled/ 1: Disabled]
001	This program disables the APS.		

5162	[App. Switch Method]	*CTL	[**0**: Soft Key Set/ 1: Hard Key Set]
001	This program specifies the switch that selects an application program.		

5167	[Fax Printing Mode at Optional]		
	Enables or disables the automatic print out without an accounting device. This SP is used when the receiving fax is accounted by an external accounting device.		
001	Fax Printing Mode at Optional Counter Off	*CTL	[0 or 1 / **0** / -] 0: Automatic printing 1: No automatic printing

5169	[CE Login]		
	If you will change the printer bit switches, you must 'log in' to service mode with this SP before you go into the printer SP mode.		
001	-	*CTL	[0 or 1 / **0** / -] 0: Disabled 1: Enabled

5186	[RK4 Disconnection Operation]		
	Enables or disables the prevention for RK4 (accounting device) disconnection. If the RK4 is disconnected for 10 seconds when this SP is set to "1 (Enable)", the machine automatically jams a sheet of paper and stops.		
001	-	*ENG	[0 or 1 / **0** / 1 /step] 0: Disable 1: Enable

5188	[Copy Nv Version]		
	Displays the version number of the NVRAM on the controller board.		
001	-	-	-

5195	[Limitless SW] **DFU**		
	-	*CTL	[0 or 1 / **0** / -] 0: Productivity priority 1: Tray priority
001	Selects the paper feed mode. **Productivity priority:** This changes the feeding tray as soon as the machine detects the priority tray even the paper still remains in the feeding tray. **Tray priority:** This changes the feeding tray after the paper in the tray where the machine has been feeding paper has been run out of. This SP is activated only when a customer selects the "Auto Paper Selsct".		

5199	[Paper Exit After Staple End.]		
001	-	*CTL	[0 or 1 / **0** / -] 0: OFF, 1: ON
	Enables or disables the paper feeding out from the finisher without stapling. ▪ If this setting is "1: ON", paper is fed out without stapling at the maximum number of the finisher stapling when the machine gets a multiple printing job (over maximum number). ▪ If this setting is "0: OFF", paper is fed out with stapling at the maximum number of the finisher stapling when the machine gets a multiple printing job (over maximum number).		

5212	[Page Numbering]	*CTL	
	This program adjusts the position of the second side page numbers. A "– value" moves the page number positions to the left edge. A "+ value" moves the page number positions to the right edge.		
003	Duplex Printout Right/Left Position	[–10 to 10 / **0** / 1 mm/step]	
004	Duplex Printout High/Low Position	[–10 to 10 / **0** / 1 mm/step]	

5302	[Set Time]		
	Adjusts the RTC (real time clock) time setting for the local time zone. Examples: For Japan (+9 GMT), enter 540 (9 hours x 60 min.) DOM: +540 (Tokyo) NA: -300 (New York) EU: + 60 (Paris) CH: +480 (Peking) TW: +480 (Taipei) AS: +480 (Hong Kong) KO: +540 (Korea)		
002	Time Difference	*CTL#	[-1440 to 1440 / **Area** / 1 min./step]

5307	[Summer Time]		
001	Setting	-	[0 to 1 / **NA, EU, ASIA** / 1 /step] 0: Disabled 1: Enabled NA and EUR: 1, ASIA: 0
	Enables or disables the summer time mode. Note ▪ Make sure that both SP5-307-3 and -4 are correctly set. Otherwise, this SP is not activated even if this SP is set to "1".		
003	Rule Set (Start)	-	
	Specifies the start setting for the summer time mode. There are 8 digits in this SP. For months 1 to 9, the "0" cannot be input in the first digit, so the eight-digit setting for -2 or -3 becomes a seven-digit setting. 1st and 2nd digits: The month. [1 to 12] 3rd digit: The week of the month. [1 to 5] 4th digit: The day of the week. [0 to 6 = Sunday to Saturday] 5th and 6th digits: The hour. [00 to 23] 7th digit: The length of the advanced time. [0 to 9 / 1 hour /step] 8th digit: The length of the advanced time. [0 to 5 / 10 minutes /step] For example: 3500010 (EU default) The timer is advanced by 1 hour at am 0:00 on the 5th Sunday in March ▪ The digits are counted from the left. ▪ Make sure that SP5-307-1 is set to "1".		
004	Rule Set (End)	-	-
	Specifies the end setting for the summer time mode. There are 8 digits in this SP. 1st and 2nd digits: The month. [1 to 12] 3rd digit: The week of the month. [0 to 5] 4th digit: The day of the week. [0 to 7 = Sunday to Saturday] 5th and 6th digits: The hour. [00 to 23] The 7th and 8 digits must be set to "00". ▪ The digits are counted from the left. ▪ Make sure that SP5-307-1 is set to "1".		

5401	[Access Control] **DFU**		
	When installing the SDK application, SAS (VAS) adjusts the following settings.		
103	Default Document ACL	*CTL	-
	Whenever a new login user is added to the address book in external certification mode (for Windows, LDAP, RDH), the default document ACL is updated according to this SP setting. [0 to 3 / **0** / 1] 0: View 1: Edit 2: Edit/Delete 3: Full control **Note:** This SP setting is ignored on a machine that is not using document server.		
104	Authentication Time	*CTL	[0 to 255 / 0 / 1 second]
	Specifies the time for the authentication timeout. 0 = 60 seconds, 1 to 255 = displayed time (seconds)		
162	Extend Certification Detail	*CTL	Selects the log out type for the extend authentication device. Bit 0: Log-out without an IC card 0: Not allowed (default) 1: Allowed
200	SDK1 Unique ID	*CTL	"SDK" is the "Software Development Kit". This data can be converted from SAS (VAS) when installed or uninstalled.
201	SDK1 Certification Method	*CTL	
210	SDK2 Unique ID	*CTL	
211	SDK2 Certification Method	*CTL	
220	SDK3 Unique ID	*CTL	
221	SDK3 Certification Method	*CTL	

230	SDK certification device	*CTL	-
	▪ Bit 0: SDK authentication 0: Off (Default), 1: On (SDK authentication enabled) Selects the SDK authentication setting. ▪ Bit 2: Administrator log in setting 0: Off (Default), 1: On		
240	Detail Option	*CTL	-
	Enalbes or disables the log out confirmation option. ▪ Bit 0: Log out confirmation option 0: Enable (default), 1: Disable Selects the automatic log out time. ▪ Bit 1 and 2: Automatic log out timer reduction 00: 60 seconds (default), 01: 10 seconds, 10: 20 seconds, 11: 30 seconds		

5404	[User Code Counter Clear]		
001	-	*CTL	Clears all counters for users.

5411	[LDAP Certification]		
004	Easy Certification	*CTL	Determines whether easy LDAP certification is done. [0 to 1 / **1** / 1] 1: On, 0: Off
005	Password Null Not Permit	*CTL	This SP is referenced only when SP5411-4 is set to "1" (On). [0 to 1 / **1** / 1] 0: Password NULL not permitted. 1: Password NULL permitted.
006	Detail Option	*CTL	-

5413	[Lockout Setting]		
001	Lockout On/Off	*CTL	Switches on/off the lock on the local address book account. [0 to 1 / **0** / 1] 0: Off, 1: On
002	Lockout Threshold	*CTL	Sets a limit on the frequency of lockouts for account lockouts. [1 to 10 / **5** / 1]
003	Cancellation On/Off	*CTL	Determines whether the system waits the prescribed time for input of a correct user ID and password after an account lockout has occurred. [0 to 1 / **0** / 1] 0: Off (no wait time, lockout not cancelled) 1: On (system waits, cancels lockout if correct user ID and password are entered.
004	Cancellation Time	*CTL	Determines the length of time that the system waits for correct input of the user ID and password after a lockout has occurred. This setting is used only if SP5413-3 is set to "1" (on). [1 to 9999 / **60** / 1 min.]

5414	[Access Mitigation]		
001	Mitigation On/Off	*CTL	Switches on/off masking of continuously used IDs and passwords that are identical. [0 to 1 / **0** /1] 0: Off 1: On
002	Mitigation Time	*CTL	Sets the length of time for excluding continuous access for identical user IDs and passwords. [0 to 60 / **15** / 1 min.]

5415	[Password Attack]		
001	Permissible Number	*CTL	Sets the number of attempts to attack the system with random passwords to gain illegal access to the system. [0 to 100 / **30** / 1 attempt]
002	Detect Time	*CTL	Sets the time limit to stop a password attack once such an attack has been detected. [1 to 10 / **5** / 1 sec.]

5416	[Access Information]		
001	Access User Max Num	*CTL	Limits the number of users used by the access exclusion and password attack detection functions. [50 to 200 / **200** / 1 users]
002	Access Password Max Num	*CTL	Limits the number of passwords used by the access exclusion and password attack detection functions. [50 to 200 / **200** / 1 passwords]
003	Monitor Interval	*CTL	Sets the processing time interval for referencing user ID and password information. [1 to 10 / **3** / 1 sec.]

5417	[Access Attack]		
001	Access Permissible Number	*CTL	Sets a limit on access attempts when an excessive number of attempts are detected for MFP features. [0 to 500 / **100** / 1]
002	Attack Detect Time	*CTL	Sets the length of time for monitoring the frequency of access to MFP features. [10 to 30 / **10** / 1 sec.]
003	Productivity Fall Wait	*CTL	Sets the wait time to slow down the speed of certification when an excessive number of access attempts have been detected. [0 to 9 / **3** / 1 sec.]

004	Attack Max Num	*CTL	Sets a limit on the number of requests received for certification in order to slow down the certification speed when an excessive number of access attempts have been detected. [50 to 200 / **200** /1 attempt]

5420	[User Authentication]		
	These settings should be done with the System Administrator. **Note**: These functions are enabled only after the user access feature has been enabled.		
001	Copy	*CTL	Determines whether certification is required before a user can use the copy applications. [0 to 1 / **0** /1] 0: On, 1: Off
011	DocumentServer	*CTL	Determines whether certification is required before a user can use the document server. [0 or 1/ **0** /1] 0: On, 1: Off
021	Fax	*CTL	Determines whether certification is required before a user can use the fax application. [0 or 1/ **0** /1] 0: On, 1: Off
031	Scanner	*CTL	Determines whether certification is required before a user can use the scan applications. [0 or 1/ **0** /1] 0: On, 1: Off
041	Printer	*CTL	Determines whether certification is required before a user can use the printer applications. [0 or 1/ **0** /1] 0: On, 1: Off

051	SDK1	*CTL	[0 or 1 / **0** / 1] 0: ON. 1: OFF Determines whether certification is required before a user can use the SDK application.
061	SDK2		
071	SDK3		

5430	Auth Dialog Message Change		
001	Message Change On/Off	*CTL	[0 or 1 / **0** / 1]
002	Message Text Download		
003	Message Text ID		

5431	External Auth User Preset		
010	Tag	*CTL	-
011	Entry		
012	Group		
020	Mail		
030	Fax		
031	Fax Sub		
032	Folder		
033	Protect Code		
034	SMTP Auth		
035	LDAP Auth		
036	SMB FTP Folder Auth		
037	Acnt Acl		
038	Document Acl		
040	Cert Crypt		
050	User Limit Count		

5481	[Authentication Error Code]		
	These SP codes determine how the authentication failures are displayed.		
001	System Log Disp	*CTL	Determines whether an error code appears in the system log after a user authentication failure occurs. [0 or 1/ **0** /1] 0: Off, 1: On
002	Panel Disp	*CTL	Determines whether an error code appears on the operation panel after a user authentication failure occurs. [0 or 1/ **1** /1] 1: On, 0: Off

5490	[MF KeyCard (Japan only)]		
001	Job Permit Setting	*CTL	Sets up operation of the machine with a keycard. [0 to 1 / **0** / 1] 0: Disabled. Cancels operation without a user code. 1: Enabled. Allows operation without a user code.

5501	[PM Alarm]	*CTL	-
001	PM Alarm Level	[0 to 9999 / **0** / 1 /step] 0: Alarm off 1 to 9999: Alarm goes off when **Value (1 to 9999) x 1000 > PM counter**	
002	Original Count Alarm	[0 or 1 / **0** / –] 0: No alarm sounds 1: Alarm sounds after the number of originals passing through the ARDF > 10,000	

5504	[Jam Alarm]	*CTL	-
001	Sets the alarm to sound for the specified jam level (document misfeeds are not included). [0 to 3 / **3** / 1 /step] 0: Zero (Off) 1: Low (2.5K jams) 2: Medium (3K jams) 3: High (6K jams)		

5505	[Error Alarm]		
	Sets the error alarm level. The error alarm counter counts "1" when any SC is detected. However, the error alarm counter decreases by "1" when an SC is not detected during a set number of copied sheets (for example, default 1500 sheets). The error alarm occurs when the SC error alarm counter reaches "5".		
001	-	*CTL	[0 to 255 / **27** / 100 copies /step]

5507	[Supply Alarm]	*CTL / -
	Enables or disables the notifying a supply call via the @Remote.	
001	Paper Supply Alarm	**0**: Off, 1: On
002	Staple Supply Alarm	0: Off, **1: On**
004	Maintenance Kit Alarm	0: Off, **1: On**
009	Cartridge Supply Alarm	0: Off, **1: On**
080	Toner Call Timing	Changes the timing of the "Toner Supply Call" via the @Remote, when the following conditions occur. **0: At replacement** 1: At near end
128	Interval :Others	[250 to 10000 / **1000** / 1 /step]
133	Interval :A4	

134	Interval :A5	
142	Interval :B5	
164	Interval :LG	
166	Interval :LT	
172	Interval :HLT	

5508*	[CC Call]	*CTL	-
001*	Jam Remains	0: Disable, **1**: Enable	
	Enables/disables initiating a call for an unattended paper jam.		
002*	Continuous Jams	0: Disable, **1**: Enable	
	Enables/disables initiating a call for consecutive paper jams.		
003*	Continuous Door Open	0: Disable, **1**: Enable	
	Enables/disables initiating a call when the front door remains open.		
011*	Jam Detection: Time Length	[3 to 30 / **10** / 1 minute /step]	
	Sets the time a jam must remain before it becomes an “unattended paper jam”. This setting is enabled only when SP5508-004 is set to "1".		
012*	Jam Detection: Continuous Count	[2 to 10 / **5** / 1 /step]	
	Sets the number of consecutive paper jams required to initiate a call. This setting is enabled only when SP5508-004 is set to "1".		
013*	Door Open: Time Length	[3 to 30 / **10** / 1 /step]	
	Sets the length of time the door remains open before the machine initiates a call. This setting is enabled only when SP5-508-004 is set to "1".		

5515	[SC/Alarm Setting]	
	With @Remote in use, these SP codes can be set to issue an SC call when an SC error occurs. If this SP is switched off, the SC call is not issued when an SC error occurs.	
001	SC Call	[0 or 1 / **1** / -] 0: Off, 1: On
002	Service Parts Near End Call	[0 or 1 / **1** / -] 0: Off, 1: On
003	Service Parts End Call	
004	User Call	[0 or 1 / **1** / -] 0: Off, 1: On
006	Communication Test Call	
007	Machine Information Notice	
008	Alarm Notice	[0 or 1 / **1** / -] 0: Off, 1: On
009	Non Genuin Tonner Alarm	[0 or 1 / **1** / -] 0: Off, 1: On
010	Supply Automatic Ordering Call	
011	Supply Manegement Report Call	
012	Jam/Door Open Call	

Note

- Memory Clear (SP5-801)
- The following tables list the items that are cleared. The serial number information, meter charge setting and meter charge counters are not cleared.

5730	[Extended Function Setting]	
010	Expiration Prior Alarm	[0 to 999 / **20** / 1 day/step]
	Specifies the expiration alarm timing.	

5731	[Counter Effect] **Japan only**	
001	Change MK1 Cnt (Paper -> Combine)	[0 or 1 / **0** / 1 /step] 0: Off, 1: On
	Specifies the expiration alarm timing.	

5733	[MICR Setting]	
001	Model Switching	**0: RICOH Standard Model**/ 1: Secure PCL MICR Model/ 2: IPDS MICR
	Selects a MICR model.	
002	Print Availability with MICR Toner	**0: Do not print**/ 1: Print
	Selects the print availability when using MICR toner.	

5801	[Memory Clear]	
001	All Clear	Resets all correction data for process control and all software counters, and returns all modes and adjustments to their default values.
002	Engine	Clears the engine settings.
003	SCS	Initializes default system settings, SCS (System Control Service) settings, operation display coordinates, and ROM update information.
004	IMH Memory Clr	Initializes the IMH settings.
005	Mcs	Initializes the Mcs settings.
006	Copier Application	Initializes all copier application settings.
007	Fax Application	Initializes the fax reset time, job login ID, all TX/RX settings, local storage file numbers, and off-hook timer.

008	Printer Application	The following service settings: ▪ Bit switches ▪ Gamma settings (User & Service) ▪ Toner Limit The following user settings: ▪ Tray Priority ▪ Menu Protect ▪ System Setting except for setting of Energy Saver ▪ I/F Setup (I/O Buffer and I/O Timeout) ▪ PCL Menu
009	Scanner Application	Initializes the scanner defaults for the scanner and all the scanner SP modes.
010	Web Service	Deletes the network file application management files and thumbnails, and initializes the job login ID.
011	NCS	All setting of Network Setup (User Menu) (NCS: Network Control Service)
012	R-Fax	Initializes the job login ID, SmartDeviceMonitor for Admin, job history, and local storage file numbers.
014	Clear DCS Setting	Initializes the DCS (Delivery Control Service) settings.
015	Clear UCS Setting	Initializes the UCS (User Information Control Service) settings.
016	MIRS Setting	Initializes the MIRS (Machine Information Report Service) settings.
017	CCS	Initializes the CCS (Certification and Charge-control Service) settings.
018	SRM Memory Clr	Initializes the SRM (System Resource Manager) settings.
019	LCS	Initializes the LCS settings.
020	Web Uapli	Initializes the web user application settings.

021	ECS	Initializes the ECS settings.

5802	[Free Run]	
001	-	**DFU**

5803	[Input Check]	See "Input Check Table" in this section.
5804	[Output Check]	See "Output Check Table" in this section.

5807	[Destin./Model]	
002	-	**DFU**

5810	[Fusing SC Clear]		
	Note ▪ Turn the main switch off and on after resetting the SC code.		
001	-	-	Resets a type A service call condition.

5811	[Machine Serial] Machine Serial Number Display		
002	Display	*ENG	Displays the machine serial number.
004	BICU	*ENG	Inputs the serial number.

5812	[Service Tel. No. Setting]		
001	Service	*CTL	-
	Sets the telephone number for a service representative. This number is printed on the Counter List, which can be printed with the user's "Counter" menu. This can be up to 20 characters (both numbers and alphabetic characters can be input).		
002	Facsimile	*CTL	-
	Sets the fax or telephone number for a service representative. This number is printed on the Counter List. This can be up to 20 characters (both numbers and alphabetic characters can be input).		
003	Supply	*CTL	-
	Use this to input the telephone number of your supplier for consumables. Enter the number and press #.		
004	Operation	*CTL	-
	Use this to input the telephone number of your sales agency. Enter the number and press #.		

5816	[Remote Service]	*CTL	**-**
001	I/F Setting		
	Selects the remote service setting. [0 to 2 / **2** / 1 /step] 0: Remote service off 1: CSS remote service on 2: @Remote service on		

002	CE Call
	Performs the CE Call at the start or end of the service. [0 or 1 / **0** / 1 /step] 0: Start of the service 1: End of the service **NOTE:** This SP is activated only when SP 5816-001 is set to "2".
003	Function Flag
	Enables or disables the remote service function. [0 to 1 / **0** / 1 /step] 0: Disabled, 1: Enabled **NOTE:** This SP setting is changed to "1" after @Remote registor has been completed.
007	SSL Disable
	Uses or does not use the RCG certification by SSL when calling the RCG. [0 to 1 / **0** / 1 /step] 0: Uses the RCG certification 1: Does no use the RCG certification
008	RCG Connect Timeout
	Specifies the connect timeout interval when calling the RCG. [1 to 90 / **30** / 1 second /step]
009	RCG Write Timeout
	Specifies the write timeout interval when calling the RCG. [1 to 100 / **60** / 1 second /step]
010	RCG Read Timeout
	Specifies the read timeout interval when calling the RCG. [1 to 100 / **60** / 1 second /step]

011	Port 80 Enable
	Enables/disables access via port 80 to the SOAP method. [0 or 1 / **0** / –] 0: Disabled, 1: Enabled
013	RFU (Remote Frimware Update) Timing
	Selects the RFU timing. [0 or 1 / **1** / –] 0: RFU is executed whenever update request is received. 1: RFU is executed only when the machine is in the sleep mode.
021	RCG-C Registed
	This SP displays the Embedded RC Gate installation end flag. 0: Installation not completed 1: Installation completed
023	Connect Type (N/M)
	This SP displays and selects the Embedded RC Gate connection method. [0 or 1 / **0** / 1 /step 0: Internet connection 1: Dial-up connection
061	Cert. Expire Timing **DFU**
	Proximity of the expiration of the certification.
062	Use Proxy
	This SP setting determines if the proxy server is used when the machine communicates with the service center.

063	Proxy Host
	This SP sets the address of the proxy server used for communication between Embedded RC Gate-N and the gateway. Use this SP to set up or display the customer proxy server address. The address is necessary to set up Embedded RC Gate-N. Note ▪ The address display is limited to 128 characters. Characters beyond the 128 character are ignored. ▪ This address is customer information and is not printed in the SMC report.
064	Proxy Port Number
	This SP sets the port number of the proxy server used for communication between Embedded RC Gate-N and the gateway. This setting is necessary to set up Embedded RC Gate-N. Note ▪ This port number is customer information and is not printed in the SMC report.
065	Proxy User Name
	This SP sets the HTTP proxy certification user name. Note ▪ The length of the name is limited to 31 characters. Any character beyond the 31st character is ignored. ▪ This name is customer information and is not printed in the SMC report.
066	Proxy Password
	This SP sets the HTTP proxy certification password. Note ▪ The length of the password is limited to 31 characters. Any character beyond the 31st character is ignored. ▪ This name is customer information and is not printed in the SMC report.

067	CERT: Up State	
	Displays the status of the certification update.	
	0	The certification used by Embedded RC Gate is set correctly.
	1	The certification request (setAuthKey) for update has been received from the GW URL and certification is presently being updated.
	2	The certification update is completed and the GW URL is being notified of the successful update.
	3	The certification update failed, and the GW URL is being notified of the failed update.
	4	The period of the certification has expired and new request for an update is being sent to the GW URL.
	11	A rescue update for certification has been issued and a rescue certification setting is in progress for the rescue GW connection.
	12	The rescue certification setting is completed and the GW URL is being notified of the certification update request.
	13	The notification of the request for certification update has completed successfully, and the system is waiting for the certification update request from the rescue GW URL.
	14	The notification of the certification request has been received from the rescue GW controller, and the certification is being stored.
	15	The certification has been stored, and the GW URL is being notified of the successful completion of this event.
	16	The storing of the certification has failed, and the GW URL is being notified of the failure of this event.
	17	The certification update request has been received from the GW URL, the GW URL was notified of the results of the update after it was completed, but a certification error has been received, and the rescue certification is being recorded.

	18	The rescue certification of No. 17 has been recorded, and the GW URL is being notified of the failure of the certification update.
068	CERT: Error	
	Displays a number code that describes the reason for the request for update of the certification.	
	0	Normal. There is no request for certification update in progress.
	1	Request for certification update in progress. The current certification has expired.
	2	An SSL error notification has been issued. Issued after the certification has expired.
	3	Notification of shift from a common authentication to an individual certification.
	4	Notification of a common certification without ID2.
	5	Notification that no certification was issued.
	6	Notification that GW URL does not exist.
069	CERT: Up ID	The ID of the request for certification.
083	Firmware Up Status	Displays the status of the firmware update.
085	Firm Up User Check	This SP setting determines if the operator can confirm the previous version of the firmware before the firmware update execution. If the option to confirm the previous version is selected, a notification is sent to the system manager and the firmware update is done with the firmware files from the URL.
086	Firmware Size	Allows the service technician to confirm the size of the firmware data files during the firmware update execution.
087	CERT: Macro Version	Displays the macro version of the @Remote certification.

088	CERT: PAC Version	Displays the PAC version of the @Remote certification.
089	CERT: ID2 Code	Displays ID2 for the @Remote certification. Spaces are displayed as underscores (_). Asteriskes (****) indicate that no @Remote certification exists.
090	CERT: Subject	Displays the common name of the NRS certification subject. CN = the following 17 bytes. Spaces are displayed as underscores (_). Asterisks (****) indicate that no DESS exists.
091	CERT: Serial Number	Displays serial number for the @Remote certification. Asterisks (****) indicate that no DESS exists.
092	CERT: Issuer	Displays the common name of the issuer of the @Remote certification. CN = the following 30 bytes. Asteriskes (****) indicate that no DESS exists.
093	CERT: Valid Start	Displays the start time of the period for which the current @Remote certification is enabled.
094	CERT: Valid End	Displays the end time of the period for which the current @Remote certification is enabled.
150	Selection Country	
	Select the country where embedded RCG-M is installed in the machine. After selecting the country, you must also set the following SP codes for embedded RCG-M: ▪ SP5816-153 ▪ SP5816-154 ▪ SP5816-161 0: Japan, 1: USA, 2: Canada, 3: UK, 4: Germany, 5: France, 6: Italy, 7: Netherlands, 8: Belgium, 9: Luxembourg, 10: Spain	

151	Line Type Authentication Judgment
	Press [Execute]. Setting this SP classifies the telephone line where embedded RCG-M is connected as either dial-up (pulse dial) or push (DTMF tone) type, so embedded RCG-M can automatically distinguish the number that connects to the outside line. ▪ The current progress, success, or failure of this execution can be displayed with SP5816-152. ▪ If the execution succeeded, SP5816-153 will display the result for confirmation and SP5816-154 will display the telephone number for the connection to the outside line.
152	Line Type Judgment Result
	Displays a number to show the result of the execution of SP5816 151. Here is a list of what the numbers mean. 0: Success 1: In progress (no result yet). Please wait. 2: Line abnormal 3: Cannot detect dial tone automatically 4: Line is disconnected 5: Insufficient electrical power supply 6: Line classification not supported 7: Error because fax transmission in progress – ioctl() occurred. 8: Other error occurred 9: Line classification still in progress. Please wait.

153	Selection Dial/Push
	This SP displays the classification (tone or pulse) of the telephone line to the access point for embedded RCG-M. The number displayed (0 or 1) is the result of the execution of SP5816-151. However, this setting can also be changed manually. [0 or 1 / **0** / 1 /step] 0: Tone Dialing Phone 1: Pulse Dialing Phone Inside Japan "2" may also be displayed: 0: Tone Dialing Phone 1: Pulse Dialing Phone 10PPS 2: Pulse Dialing Phone 20PPS
154	Outside Line/Outgoing Number
	The SP sets the number that switches to PSTN for the outside connection for embedded RCG-M in a system that employs a PBX (internal line). ▪ If the execution of SP5816-151 has succeeded and embedded RCG-M has connected to the **external** line, this SP display is completely blank. ▪ If embedded RCG-M has connected to an **internal** line, then the number of the connection to the external line is displayed. ▪ If embedded RCG-M has connected to an external line, a comma is displayed with the number. The comma is inserted for a 2 sec. pause. ▪ The number setting for the external line can be entered manually (including commas).
156	Dial Up User Name
	Use this SP to set a user name for access to remote dial up. Follow these rules when setting a user name: ▪ Name length: Up to 32 characters ▪ Spaces and # allowed but the entire entry must be enclosed by double quotation marks (").

157	Dial Up Password
	Use this SP to set a password for access to remote dial up. Follow these rules when setting a user name: ▪ Name length: Up to 32 characters Spaces and # allowed but the entire entry must be enclosed by double quotation marks (").
161	Local Phone Number
	Use this SP to set the telephone number of the line where embedded RCG-M is connected. This number is transmitted to and used by the Call Center to return calls. Limit: 24 numbers (numbers only)
162	Connection Timing Adjustment: Incoming
	When the Call Center calls out to an embedded RCG-M modem, it sends a repeating ID tone (*#1#). This SP sets the time the line remains open to send these ID tones after the number of the embedded RCG-M modem is dialed up and connected. [0 to 24 / **1** / 1 /step] The actual amount of time is this setting x 2 sec. For example, if you set "2" the line will remain open for 4 sec.
163	Access Point
	This is the number of the dial-up access point for RCG-M. If no setting is done for this SP code, then a preset value (determined by the country selected) is used. Default: 0 Allowed: Up to 16 alphanumeric characters

<table>
<tr><td rowspan="2">164</td><td colspan="2">Line Connecting</td></tr>
<tr><td colspan="2">This SP sets the connection conditions for the customer. This setting dedicates the line to RCG-M only, or sets the line for sharing between RCG-M and a fax unit.
[0 to 1 / 0 / 1 /step]
0: Sharing Fax
1: No Sharing Fax
Note
▪ If this setting is changed, the copier must be cycled off and on.
▪ SP5816 187 determines whether the off-hook button can be used to interrupt a RCG-M transmission in progress to open the line for fax transaction.</td></tr>
<tr><td>173</td><td>Modem Serial Number</td><td>This SP displays the serial number registered for the RCG -M.</td></tr>
<tr><td rowspan="2">174</td><td colspan="2">Retransmission Limit</td></tr>
<tr><td colspan="2">Normally, it is best to allow unlimited time for certification and ID2 update requests, and for the notification that the certification has been completed. However, RCG -M generates charges based on transmission time for the customer, so a limit is placed upon the time allowed for these transactions. If these transactions cannot be completed within the allowed time, do this SP to cancel the time restriction.</td></tr>
<tr><td rowspan="2">187</td><td>FAX TX Priority</td><td>-</td></tr>
<tr><td colspan="2">This SP determines whether pushing the off-hook button will interrupt a RCG-M transmission in progress to open the line for fax transaction. This SP can be used only if SP5816 164 is set to "0".
[0 or 1/ 0 / -]
0: Disable, 1: Enable</td></tr>
</table>

200	Manual Polling	-	Executes the manual polling.
201	Regist: Status		
	Displays a number that indicates the status of the @Remote service device. 0: Neither the registered device by the external nor embedded RCG device is set. 1: The embedded RCG device is being set. Only Box registration is completed. In this status, this unit cannot answer a polling request from the external RCG. 2. The embedded RCG device is set. In this status, the external RCG unit cannot answer a polling request. 3. The registered device by the external RCG is being set. In this status the embedded RCG device cannot be set. 4 The registered module by the external RCG has not started.		
202	Letter Number	Allows entry of the number of the request needed for the embedded RCG.	
203	Confirm Execute	Executes the inquiry request to the @Remote GW URL.	
204	Confirm Result		
	Displays a number that indicates the result of the inquiry executed with SP5816 203. 0: Succeeded 1: Inquiry number error 2: Registration in progress 3: Proxy error (proxy enabled) 4: Proxy error (proxy disabled) 5: Proxy error (Illegal user name or password) 6: Communication error 7: Certification update error 8: Other error 9: Inquiry executing		

<table>
<tr><td rowspan="2">205</td><td colspan="3">Confirm Place</td></tr>
<tr><td colspan="3">Displays the result of the notification sent to the device from the GW URL in answer to the inquiry request. Displayed only when the result is registered at the GW URL.</td></tr>
<tr><td>206</td><td>Register Execute</td><td colspan="2">Executes "Embedded RCG Registration".</td></tr>
<tr><td rowspan="2">207</td><td colspan="3">Register Result</td></tr>
<tr><td colspan="3">Displays a number that indicates the registration result.
0: Succeeded
2: Registration in progress
3: Proxy error (proxy enabled)
4: Proxy error (proxy disabled)
5: Proxy error (Illegal user name or password)
6: Communication error
7: Certification update error
8: Other error
9: Registration executing</td></tr>
<tr><td rowspan="7">208</td><td colspan="3">Error Code</td></tr>
<tr><td colspan="3">Displays a number that describes the error code that was issued when either SP5816-204 or SP5816-207 was executed.</td></tr>
<tr><td>Cause</td><td>Code</td><td>Meaning</td></tr>
<tr><td rowspan="3">Illegal Modem Parameter</td><td>-11001</td><td>Chat parameter error</td></tr>
<tr><td>-11002</td><td>Chat execution error</td></tr>
<tr><td>-11003</td><td>Unexpected error</td></tr>
<tr><td rowspan="3">Operation Error, Incorrect Setting</td><td>-12002</td><td>Inquiry, registration attempted without acquiring device status.</td></tr>
<tr><td>-12003</td><td>Attempted registration without execution of an inquiry and no previous registration.</td></tr>
<tr><td>-12004</td><td>Attempted setting with illegal entries for certification and ID2.</td></tr>
</table>

	Error Caused by Response from GW URL	-2385	Attempted dial up overseas without the correct international prefix for the telephone number.
		-2387	Not supported at the Service Center
		-2389	Database out of service
		-2390	Program out of service
		-2391	Two registrations for same device
		-2392	Parameter error
		-2393	Basil not managed
		-2394	Device not managed
		-2395	Box ID for Basil is illegal
		-2396	Device ID for Basil is illegal
		-2397	Incorrect ID2 format
		-2398	Incorrect request number format
209	@Remote Setting Clear	Releases the machine from its embedded RCG setup.	
250	CommLog Print	Prints the communication log.	

5821	[Remote Service Address]		
002	RCG IP Address	*CTL	Sets the IP address of the RCG (Remote Communication Gate) destination for call processing at the remote service center.

5824	[NV-RAM Data Upload]		
	Uploads the UP and SP mode data (except for counters and the serial number) from the NVRAM to an SD card. For details, see the "NVRAM Data Upload/Download" in the "System Maintenance Reference" of the Field Service Manual.		
001	-	#	-

5825	[NV-RAM Data Download]		
	Downloads the UP and SP mode data from an SD card to the NVRAM. For details, see the "NVRAM Data Upload/Download" in the "System Maintenance Reference" of the Field Service Manual.		
001	-	#	-

5828	[Network Setting]	*CTL	**-**
050	1284 Compatibility (Centro)	Enables or disables 1284 Compatibility. 0 or 1 / 1 / 1 / step] 0: Disabled, 1: Enabled	
052	ECP (Centro)	Enables or disables ECP Compatibility. [0 or 1 / 1 / 1 / step] 0: Disabled, 1: Enabled Note ▪ This SP is activated only when SP5-828-50 is set to "1".	
065	Job Spooling	Enables/disables Job Spooling. [0 or 1 / **0** / 1 / step] 0: Disabled, 1: Enabled	
066	Job Spooling Clear: Start Time	Treatment of the job when a spooled job exists at power on. 0: ON (Data is cleared) **1**: OFF (Automatically printed)	

069	Job Spooling (Protocol)	Validates or invalidates the job spooling function for each protocol. **0**: Validates 1: Invalidates bit0: LPR bit1: FTP bit2: IPP bit3: SMB bit4: BMLinkS bit5: DIPRINT bit6: sftp bit7: (Reserved)
090	TELNET (0: OFF 1: ON)	Enables or disables the Telnet protocol. [0 or 1 / **1** / –] 0: Disable, 1: Enable
091	Web (0: OFF 1: ON)	Enables or disables the Web operation. [0 or 1 / **1** / –] 0: Disable, 1: Enable
145	Active IPv6 Link Local Address	This is the IPv6 local address link referenced on the Ethernet or wireless LAN (802.11b) in the format: "Link Local Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
147	Active IPv6 Stateless Address 1	These SPs are the IPv6 status addresses (1 to 5) referenced on the Ethernet or wireless LAN (802.11b) in the format: "Status Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
149	Active IPv6 Stateless Address 2	
151	Active IPv6 Stateless Address 3	
153	Active IPv6 Stateless Address 4	
155	Active IPv6 Stateless Address 5	

156	IPv6 Manual Address	This SP is the IPv6 manually set address referenced on the Ethernet or wireless LAN (802.11b) in the format: "Manual Set Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
158	IPv6 Gateway Address	This SP is the IPv6 gateway address referenced on the Ethernet or wireless LAN (802.11b). The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
161	IPv6 Stateless Auto Setting	Enables or disables the automatic setting for IPv6 stateless. [0 or 1 / 1 / 1 /step] 0: Disable, 1: Enable
236	Web Item visible	Displays or does not display the Web system items. [0 x 0000 to 0 x ffff / **0 x ffff**] 0: Not displayed, 1: Displayed bit0: Net RICOH bit1: Consumable Supplier bit2-15: Reserved (all)
237	Web shopping link visible	Displays or does not display the link to Net RICOH on the top page and link page of the web system. [0 to 1 / **1** / 1] 0: Not display, 1:Display
238	Web supplies Link visible	Displays or does not display the link to Consumable Supplier on the top page and link page of the web system. [0 to 1 / **1** / 1] 0: Not display, 1:Display
239	Web Link1 Name	This SP confirms or changes the URL1 name on the link page of the web system. The maximum characters for the URL name are 31 characters.

240	Web Link1 URL	This SP confirms or changes the link to URL1 on the link page of the web system. The maximum characters for the URL are 127 characters.
241	Web Link1 visible	Displays or does not display the link to URL1 on the top page of the web system. [0 to 1 / **1** / 1] 0: Not display, 1:Display
242	Web Link2 Name	Same as "-239"
243	Web Link2 URL	Same as "-240"
244	Web Link2 visible	Same as "-241"

5832	[HDD]	*CTL	-
001	HDD Formatting (ALL)	Initializes the hard disk. Use this SP mode only if there is a hard disk error.	
002	HDD Formatting (IMH)		
003	HDD Formatting (Thumbnail)		
004	HDD Formatting (Job Log)		
005	HDD Formatting (Printer Fonts)		
006	HDD Formatting (User Info)		
007	Mail RX Data		
008	Mail TX Data		
009	HDD Formatting (Data for a Design)		
010	HDD Formatting (Log)		
011	HDD Formatting (Ridoc I/F)		

5836	[Capture Settings]	*CTL	-
001	Capture Function (0:Off 1:On)		**0**: Disable, 1: Enable
	With this function disabled, the settings related to the capture feature cannot be initialized, displayed, or selected.		
002	Panel Setting		**0**: Displayed, 1: Not displayed
	Displays or does not display the capture function buttons.		
	5836-71 to 5836-78, Copier and Printer Document Reduction The following 6 SP modes set the default reduction for stored documents sent to the document management server via the MLB. Enabled only when optional MLB (Media Link Board) is installed.		
072	Reduction for Copy B&W Text		**0: 1**, 1: 1/2, 2: 1/3, 3: 1/4, 6: 2/3
073	Reduction for Copy B&W Other		**0: 1**, 1: 1/2, 2: 1/3, 3: 1/4, 6: 2/3
075	Reduction for Printer B&W		**0: 1**, 1: 1/2, 2: 1/3, 3: 1/4, 6: 2/3
078	Reduction for Printer B&W 1200		**1: 1/2**, 3: 1/4, 4: 1/6, 5: 1/8 (2: skipped)
	5836-82 to 5836-85, Stored document format The following 6 SP modes set Sets the default format for stored documents sent to the document management server via the MLB. Enabled only when optional MLB (Media Link Board) is installed.		
082	Format for Copy B&W Text		0: JFIF/JPEG, **1: TIFF/MMR**, 2: TIFF/MH, 3: TIFF/MR
083	Format Copy B&W Other		0: JFIF/JPEG, **1: TIFF/MMR**, 2: TIFF/MH, 3: TIFF/MR
085	Format for Printer B&W		0: JFIF/JPEG, **1: TIFF/MMR**, 2: TIFF/MH, 3: TIFF/MR

091	Default for JPEG	[5 to 95 / **50** / 1 /step]
	Sets the JPEG format default for documents sent to the document management server via the MLB with JPEG selected as the format. Enabled only when optional MLB (Media Link Board) is installed.	
101	Primary srv IP address	Sets the IP address for the primary capture server. This is basically adjusted by the remote system.
102	Primary srv scheme	This is basically adjusted by the remote system.
103	Primary srv port number	This is basically adjusted by the remote system.
104	Primary srv URL path	This is basically adjusted by the remote system.
111	Secondary srv IP address	Sets the IP address for the secondary capture server. This is basically adjusted by the remote system.
112	Secondary srv scheme	This is basically adjusted by the remote system.
113	Secondary srv port number	This is basically adjusted by the remote system.
114	Secondary srv URL path	This is basically adjusted by the remote system.
120	Default Reso Rate Switch	This is basically adjusted by the remote system.
122	Reso: Copy (Mono)	[0 to 5 / **3** / 1/step]
	Selects the resolution for BW copy mode. This is basically adjusted by the remote system. 0: 600dpi/ 1: 400dpi/ 2: 300dpi/ 3: 200dpi/ 4: 150dpi/ 5: 100dpi	

124	Reso: Print (Mono)	This is basically adjusted by the remote system. [0 to 5 / **3** / 1/step]
	Selects the resolution for BW print mode. This is basically adjusted by the remote system. 0: 600dpi/ 1: 400dpi/ 2: 300dpi/ 3: 200dpi/ 4: 150dpi/ 5: 100dpi	
126	Reso: Fax (Mono)	This is basically adjusted by the remote system. [0 to 6 / **3** / 1/step]
	Selects the resolution for BW fax mode. This is basically adjusted by the remote system. 0: 600dpi/ 1: 400dpi/ 2: 300dpi/ 3: 200dpi/ 4: 150dpi/ 5: 100dpi/ 6: 75dpi	
127	Reso: Scan (Color)	This is basically adjusted by the remote system. [0 to 6 / **4** / 1/step]
	Selects the resolution for color scanning mode. This is basically adjusted by the remote system. 0: 600dpi/ 1: 400dpi/ 2: 300dpi/ 3: 200dpi/ 4: 150dpi/ 5: 100dpi/ 6: 75dpi	
128	Reso: Scan (Mono)	This is basically adjusted by the remote system. [0 to 6 / **3** / 1/step]
	Selects the resolution for BW scanning mode. This is basically adjusted by the remote system. 0: 600dpi/ 1: 400dpi/ 2: 300dpi/ 3: 200dpi/ 4: 150dpi/ 5: 100dpi/ 6: 75dpi	
141	All Addr Info Switch	[0 to 1 / **1** /1]
	Switch this SP off if the system is performing slowly due to a large number of resources in use. If this SP is switched off, only 2000 documents can be queued for sending to the Capture Server. (See SP5836-142 below.) 0: Off, 1: On	
142	Stand-by Doc Max Number	[10 to 10000 / **2000** / 1]
	This SP sets the maximum number of documents to be held on stand-by before they are sent to the Capture Server. However, the maximum number (10,000) cannot be set unless SP5386-141 has been disabled (switched off).	

5837	[Program Checksum]		
	-	-	Displays the program checksum result.

5840	[IEEE 802.11]		
006	Channel MAX	*CTL	Sets the maximum number of channels available for data transmission via the wireless LAN. The number of channels available varies according to location. The default settings are set for the maximum end of the range for each area. Adjust the upper 4 bits to set the maximum number of channels. EU: [1 to 13 / **13** / 1/step] NA: [1 to 11 / **11** / 1/step] AS: [1 to 14 / **14** / 1/step]
007	Channel MIN	*CTL	Sets the minimum number of channels available for data transmission via the wireless LAN. The number of channels available varies according to location. The default settings are set for the minimum end of the range for each area. Adjust the lower 4 bits to set the minimum number of channels. EU: [1 to 13 / **1** / 1/step] NA/ AS: [1 to 11 / **1** / 1/step] AS: [1 to 14 / **14** / 1/step]

008	Transmission Speed	*CTL	[0 x 00 to 0 x FF / **0 x FF to Auto** / -] **0 x FF to Auto** [Default] 0 x 11 - 55M Fix 0 x 10 - 48M Fix 0 x 0F - 36M Fix 0 x 0E - 18M Fix 0 x 0D - 12M Fix 0 x 0B - 9M Fix 0 x 0A - 6M Fix 0 x 07 - 11M Fix 0 x 05 - 5.5M Fix 0 x 08 - 1M Fix 0 x 13 - 0 x FE (reserved) 0 x 12 - 72M (reserved) 0 x 09 - 22M (reserved)
011	WEP Key Select	*CTL	Selects the WEP key. [00 to 11 / **00** / 1 binary] 00: Key #1 01: Key #2 (Reserved) 10: Key #3 (Reserved) 11: Key #4 (Reserved)
042	Fragment Thresh	*CTL	Adjusts the fragment threshold for the IEEE802.11 card. [256 to 2346 / **2346** / 1] This SP is displayed only when the IEEE802.11 card is installed.
043	11g CTS to Self	*CTL	Determines whether the CTS self function is turned on or off. [0 to 1 / **1** / 1] 0: Off, 1: On This SP is displayed only when the IEEE802.11 card is installed.
044	11g Slot Time	*CTL	Selects the slot time for IEEE802.11. [0 to 1 / **0** / 1] 0: 20 µm, 1: 9 µm This SP is displayed only when the IEEE802.11 card is installed.

045	WPA Debug Lvl	*CTL	Selects the debug level for WPA authentication application. [1 to 3 / **3** / 1] 1: Info, 2: warning, 3: error This SP is displayed only when the IEEE802.11 card is installed.

5841	[Supply Name Setting]		
001	Toner Name Setting: Black	*CTL	Specifies supply names. These appear on the screen when the user presses the Inquiry button in the user tools screen.
011	Staple Std1		
012	Staple Std2		
013	Staple Std3		
014	Staple Std4		

5842	[GWWS Analysis] **DFU**		
001	Setting 1	*CTL	Default: **00000000** – do not change Netfiles: Jobs to be printed from the document server using a PC and the DeskTopBinder software
002	Setting 2	*CTL	Adjusts the debug program modesetting. Bit7: 5682 mmseg-log setting 0: Date/Hour/Minute/Second 1: Minute/Second/Msec. 0 to 6: Not used

5844	[USB]		
001	Transfer Rate	*CTL	Adjusts the USB transfer rate. [0001 or 0004 / **0004** / -] 0001: Full speed, 0004: Auto Change
002	Vendor ID	*CTL	Displays the vendor ID.
003	Product ID	*CTL	Displays the product ID.

004	Dev Release Number	*CTL	Displays the device release version number.
005	Fixed USB Port	*CTL	Displays the fixed USB Port.
006	PnP Model Name	*CTL	Displays the PnP Model Name.
007	PnP Serial Number	*CTL	Displays the PnP Serial Number.
100	Notify Unsupport	*CTL	Displays a message of the unspported USB device for the USB host slot. [0 or 1 / **1** / -] 0: Not displayed, 1: Displayed

5845	[Delivery Server Setting]	*CTL	-
	Provides items for delivery server settings.		
001	FTP Port No.	[0 to 65535 / **3670** / 1 /step]	
	Sets the FTP port number used when image files to the Scan Router Server.		
002	IP Address (Primary)	Range: **000.000.000.000** to 255.255.255.255	
	Use this SP to set the Scan Router Server address. The IP address under the transfer tab can be referenced by the initial system setting.		
006	Delivery Error Display Time	[0 to 999 / **300** / 1 second /step]	
	Use this setting to determine the length of time the prompt message is displayed when a test error occurs during document transfer with the NetFile application and an external device.		
008	IP Address (Secondary)	Range: **000.000.000.000** to 255.255.255.255	
	Specifies the IP address assigned to the computer designated to function as the secondary delivery server of Scan Router. This SP allows only the setting of the IP address without reference to the DNS setting.		

<table>
<tr><td rowspan="2">009</td><td>Delivery Server Model</td><td>[0 to 4/ 0 / 1 /step]</td></tr>
<tr><td colspan="2">Allows changing the model of the delivery server registered by the I/O device.
0: Unknown
1: SG1 Provided
2: SG1 Package
3: SG2 Provided
4: SG2 Package</td></tr>
<tr><td>010</td><td>Delivery Svr. Capability</td><td>[0 to 255 / 0 / 1 /step]</td></tr>
<tr><td rowspan="8"></td><td colspan="2">Bit7 = 1 Comment information exits</td><td rowspan="8">Changes the capability of the registered that the I/O device registered.</td></tr>
<tr><td colspan="2">Bit6 = 1 Direct specification of mail address possible</td></tr>
<tr><td colspan="2">Bit5 = 1 Mail RX confirmation setting possible</td></tr>
<tr><td colspan="2">Bit4 = 1 Address book automatic update function exists</td></tr>
<tr><td colspan="2">Bit3 = 1 Fax RX delivery function exists</td></tr>
<tr><td colspan="2">Bit2 = 1 Sender password function exists</td></tr>
<tr><td colspan="2">Bit1 = 1 Function to link MK-1 user and Sender exists</td></tr>
<tr><td colspan="2">Bit0 = 1 Sender specification required (if set to 1, Bit6 is set to “0”)</td></tr>
<tr><td rowspan="3">011</td><td>Delivery Svr Capability (Ext)</td><td>[0 to 255 / 0 / 1 /step]</td></tr>
<tr><td colspan="2">Changes the capability of the registered that the I/O device registered.</td></tr>
<tr><td colspan="2">Bit7 = 1 Address book usage limitation (Limitation for each authorized user)
Bit6 = 1 RDH authorization link
Bit5 to 0: Not used</td></tr>
<tr><td rowspan="2">013</td><td colspan="2">Server Scheme (Primary) DFU</td></tr>
<tr><td colspan="2">This is used for the scan router program.</td></tr>
<tr><td rowspan="2">014</td><td colspan="2">Server Port Number (Primary) DFU</td></tr>
<tr><td colspan="2">This is used for the scan router program.</td></tr>
</table>

015	Server URL Path (Primary) **DFU**
	This is used for the scan router program.
016	Server Scheme (Secondary) **DFU**
	This is used for the scan router program.
017	Server Port Number (Secondary) **DFU**
	This is used for the scan router program.
018	Server URL Path (Secondary) **DFU**
	This is used for the scan router program.
022	Rapid Sending Control
	Enables or disables the prevention function for the continuous data sending error. [0 to 1 / **0** / -] 0: Disable, 1: Enable

5846	[UCS Settings]	*CTL	-
001	Machine ID (For Delivery Server)		Displays ID
	Displays the unique device ID in use by the delivery server directory. The value is only displayed and cannot be changed. This ID is created from the NIC MAC or IEEE 1394 EUI. The ID is displayed as either 6-byle or 8-byte binary.		
002	Machine ID Clear (For Delivery Server)		Clears ID
	Clears the unique ID of the device used as the name in the file transfer directory. Execute this SP if the connection of the device to the delivery server is unstable. After clearing the ID, the ID will be established again automatically by cycling the machine off and on.		
003	Maximum Entries		[2000 to 20000/ **2000** /1 /step]
	Changes the maximum number of entries that UCS can handle. If a value smaller than the present value is set, the UCS managed data is cleared, and the data (excluding user code information) is displayed.		

006	Delivery Server Retry Timer	[0 to 255 / **0** / 1 /step]
	Sets the interval for retry attempts when the delivery server fails to acquire the delivery server address book.	
007	Delivery Server Retry Times	[0 to 255 / **0** / 1 /step]
	Sets the number of retry attempts when the delivery server fails to acquire the delivery server address book.	
008	Delivery Server Maximum Entries	[2000 to 50000 / 2000 / 1 /step]
	Sets the maximum number account entries of the delivery server user information managed by UCS.	
010	LDAP Search Timeout	[1 to 255 / **60** / 1 /step]
	Sets the length of the timeout for the search of the LDAP server.	
020	WSD Maximum Entries	[5 to 250 / 250 / 1 /step]
	Sets the maximum entries for the address book of the WSD (WS-scanner).	
021	Floder Auth Change	[0 to 1 / **0** / 1]
	This SP determines whether the user login information (Login User name and Password) or address (destination setting in the address book for Scan-to-SMB) is used to permit folder access. The machine must be cycled off/on for this setting to take effect if it is changed. 0: Uses operator login information (initial value of main machine) 1: Uses address authorization information	
022	Initial Value of Upper Limit Count	[0 to 999 / **500** / 1]
	Sets the initial value of upper limit count.	

040	Addr Book Migration (USB to HDD)	
	Not used in this machine.	
041	Fill Addr Acl Info.	
	This SP must be executed immediately after installation of an HDD unit in a basic machine that previously had no HDD. The first time the machine is powered on with the new HDD installed, the system automatically takes the address book from the NVRAM and writes it onto the new HDD. However, the new address book on the HDD can be accessed only by the system administrator at this stage. Executing this SP by the service technician immediately after power on grants full address book access to all users. Procedure 1. Turn the machine off. 2. Install a new HDD. 3. Turn the machine on. 4. The address book and its initial data are created on the HDD automatically. 5. However, at this point the address book can be accessed by only the system administrator or key operator. 6. Enter the SP mode and do SP5846-041. After this SP executes successfully, any user can access the address book.	
043	Addr Book Media	Displays the slot number where an address book data is in. [0 to 30 / **-** /1] 0: Unconfirmed 1: SD Slot 1 2: SD Slot 2 4: USB Flash ROM 20: HDD 30: Nothing
047	Initialize Local Addr Book	Clears the local address book information, including the user code.
048	Initialize Delivery Addr Book	Clears the distribution address book information, except the user code.

049	Initialize LDAP Addr Book	Clears the LDAP address book information, except the user code.
050	Initialize All Addr Book	Clears all directory information managed by UCS, including all user codes.
051	Backup All Addr Book	Uploads all directory information to the SD card.
052	Restore All Addr Book	Downloads all directory information from the SD card.
053	Clear Backup Info	Deletes the address book data from the SD card in the service slot. Deletes only the files that were uploaded from this machine. This feature does not work if the card is write-protected. Note ▪ After you do this SP, go out of the SP mode, and then turn the power off. ▪ Do not remove the SD card until the Power LED stops flashing.
060	Search Option	
	This SP uses bit switches to set up the fuzzy search options for the UCS local address book. Bit: Meaning 0: Checks both upper/lower case characters 1: Japan Only 2: Japan Only 3: Japan Only 4 to 7: Not Used	

062	Complexity Option 1 Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to **upper case** and sets the length of the password. [0 to 32 / **0** / 1 /step] Note ▪ This SP does not normally require adjustment. ▪ This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.	
063	Complexity Option 2 **DFU**	
064	Complexity Option 3 **DFU**	
065	Complexity Option 4 **DFU**	
091	FTP Auth Port Setting	Specifies the FTP port for getting a distribution server address book that is used in the identification mode. [0 to 65535 / **3671** / 1 /step]
094	Encryption Stat	Shows the status of the encryption function for the address book data.

5847	[Rep Resolution Reduction]	*CTL	-
	SP5847-1 through SP5847-7 changes the default settings of image data transferred externally by the Net File page reference function. [0 to 5 / **2** / 1 /step] SP5847-21 sets the default for JPEG image quality of image files handled by NetFile. “Net files” are jobs to be printed from the document server using a PC and the DeskTopBinder software.		
002	Rate for Copy B&W Text		0: 1x 1: 1/2x
003	Rate for Copy B&W Other		

005	Rate for Printer B&W	**2: 1/3x** 3: 1/4x 4: 1/6x 5: 1/8x
007	Rate for Printer B&W 1200dpi	0: 1x **1: 1/2x** 2: 1/3x 3: 1/4x 4: 1/6x 5: 1/8x
021	Network Quality Default for JPEG	
	Sets the default value for the quality of JPEG images sent as NetFile pages. This function is available only with the MLB (Media Link Board) option installed. [5 to 95 / **50** / 1 /step]	

5848	[Web Service]	*CTL	-
	SP5848-2 sets the 4-bit switch assignment for the access control setting. Setting of 0001 has no effect on access and delivery from Scan Router. 5848 100 sets the maximum size allowed for downloaded images. The default is equal to 1 gigabyte.		
002	Access Ctrl: Repository (only Lower 4 bits)	0000: No access control 0001: Denies access to DeskTop Binder. 0010: No writing control	
003	Access Control: Doc. Svr. Print (Lower 4 bits)	Switches access control on and off. **0000**: No access control 0001: Denies access to DeskTop Binder.	
004	Access Ctrl: user Directory (only Lower 4 bits)		
007	Access Ctrl: Comm. Log Fax (Lower 4 bits)		
009	Access Ctrl: Job Ctrl (Lower 4 bits)		

011	Access Ctrl: Device management (Lower 4 bits)	
021	Access Ctrl: Delivery (Lower 4 bits)	
022	Access Ctrl: uadministration (Lower 4bits)	
099	Repository: Download Image Setting	**DFU**
100	Repository: Download Image Max. Size	Specifies the max size of the image data that the machine can download. [1 to 1024 / **1024** / 1 MB /step]
210	Setting: LogType: Job1	**DFU**
211	Setting: LogType: Job2	
212	Setting: LogType: Access	
213	Setting: Primary Srv	
214	Setting: Secondary Srv	
215	Setting: Start Time	
216	Setting: Interval Time	
217	Setting: Timing	

5849	**[Installation Date]**	*CTL	-
001	Display	The "Counter Clear Day" has been changed to "Installation Date" or "Inst. Date".	
002	Switch to Print	Determines whether the installation date is printed on the printout for the total counter. [0 or 1 / **1** / -] 0: OFF (No Print) 1: ON (Print)	
003	Total Counter	-	

5851	[Bluetooth Mode]
	Sets the operation mode for the Bluetooth Unit. Press either key. **[0:Public]** [1: Private]

5853	[Stamp Data Download]
	Use this SP to download the fixed stamp data stored in the firmware of the ROM and copy it to the HDD. This SP can be executed as many times as required. This SP must be executed after replacing or formatting the hard disks. Note ▪ This SP can be executed only with the hard disks installed.

5856	[Remote ROM Update]		
	Allows the technician to upgrade the firmware using a local port (IEEE1284) when updating the remote ROM.		
002	Local Port	*CTL	[0 to 1 / **0** / 1/step] 0: Disable 1: Enable

5857	[Save Debug Log]	*CTL	-
001	On/Off (1:ON 0:OFF)	**0**: OFF, 1: ON	
	Switches the debug log feature on and off. The debug log cannot be captured until this feature is switched on.		
002	Target (2: HDD 3: SD)	**2**: HDD, 3: SD Card	
	Selects the storage device to save debug logs information when the conditions set with SP5-858 are satisfied. [2 to 3 / **2** / 1 /step]		

005	Save to HDD	
	Saves the debug log of the input SC number in memory to the HDD. A unique file name is generated to avoid overwriting existing file names on the SD Card. Up to 4MB can be copied to an SD Card. 4 MB segments can be copied one by one to each SD Card.	
006	Save to SD Card	
	Saves the debug log of the input SC number in memory to the SD card.	
009	Copy HDD to SD Card (Latest 4 MB)	
010	Copy HDD to SD Card (Latest 4 MB Any Key)	
011	Erase HDD Debug Data	
012	Erase SD Card Debug Data	
013	Free Space on SD Card	
014	Copy SD to SD (Latest 4 MB)	
015	Copy SD to SD (Latest 4 MB Any Key)	
016	Make HDD Debug	
017	Make SD Debug	

5858	[Debug Save When]	*CTL	-
	These SPs select the content of the debugging information to be saved to the destination selected by SP5857-002. SP5858-3 stores one SC specified by number. Refer to Section 4 for a list of SC error codes.		
001	Engine SC Error	Turns on/off the debug save for SC codes generated by printer engine errors. [0 or 1 / **0** / 1/ step] 0: OFF, 1: ON	
002	Controller SC Error	Turns on/off the debug save for SC codes generated by GW controller errors. [0 or 1 / **0** / 1/ step] 0: OFF, 1: ON	
003	Any SC Error	[0 to 65535 / **0** / 1 /step]	
004	Jam	Turns on/off the debug save for jam errors. [0 or 1 / **0** / 1/ step] 0: OFF, 1: ON	

5859	[Debug Save Key No.]	*CTL	**-**
001	Key 1	These SPs allow you to set up to 10 keys for log files for functions that use common memory on the controller board. [–9999999 to 9999999 / **0** / –]	
002	Key 2		
003	Key 3		
004	Key 4		
005	Key 5		
006	Key 6		
007	Key 7		
008	Key 8		
009	Key 9		

010	Key 10	

5860	[SMTP/POP3/IMAP4]	*CTL	-
020	Partial Mail Receive Timeout		[1 to 168 / **72** / –]
	Sets the amount of time to wait before saving a mail that breaks up during reception. The received mail is discarded if the remaining portion of the mail is not received during this prescribed time.		
021	MDN Response RFC2298 Compliance		[0 to 1 / **1** / –]
	Determines whether RFC2298 compliance is switched on for MDN reply mail. 0: No **1**: Yes		
022	SMTP Auth. From Field Replacement		[0 to 1 / **0** / –]
	Determines whether the FROM item of the mail header is switched to the validated account after the SMTP server is validated. **0**: No. "From" item not switched. 1: Yes. "From" item switched.		
025	SMTP Auth. Direct Setting		[0 or 1 / **0** / –]
	Selects the authentication method for SMPT. **Bit switch:** ▪ Bit 0: LOGIN ▪ Bit 1: PLAIN ▪ Bit 2: CRAM MD5 ▪ Bit 3: DIGEST MD5 ▪ Bit 4 to 7: Not used Note ▪ This SP is activated only when SMTP authorization is enabled by UP mode.		

026	S/MIME: MIME Header Setting	-	Selects the MIME header type of an E-mail sent by S/MIME. [0 to 2 / **0** / 1] 0: Microsoft Outlook Express standard 1: Internet Draft standard 2: RFC standard

5866	[E-mail Report] **DFU**		
001	Report Validity	*CTL	Enables or disables the e-mail alert. [0 or 1 / **0** / –] 0: Enable, 1: Disable
005	Add Date Field	*CTL	Adds or does not add the date field to the header of the alert mail. [0 or 1 / **0** / –] 0: Not added, 1: Added

5870	[Common Key Info Writing]		
001	Writing	*CTL	Rewrites the common certification used for the @Remote.
003	Initialize	*CTL	-
	Initializes the set certification. When the GW controller board is replaced with a new one for repair, you must execute the "Initiralize (-003)" and "Writing (-001)" just after the new board replacement. **NOTE:** Turn off and on the main power switch after the "Initiralize (-003)" and "Writing (-001)" have been done.		

5873	[SD Card Appli Move]	
001	Move Exec	This SP copies the application programs from the original SD card in SD card slot 2 to an SD card in SD card slot 1.
002	Undo Exec	This SP copies back the application programs from an SD card in SD Card Slot 2 to the original SD card in SD card slot 1. Use this menu when you have mistakenly copied some programs by using "Move Exec" (SP5873-1).

5875	[SC Auto Reboot]		
001	Reboot Setting	*CTL	Enables or disables the automatic reboot function when an SC error occurs. [0 or 1/ **0** / –] 0: The machine reboots automatically when the machine issues an SC error and logs the SC error code. If the same SC occurs again, the machine does not reboot. 1: The machine does not reboot when an SC error occurs. The reboot is not executed for Type A or C SC codes.
002	Reboot Type	*CTL	Selects the reboot method for SC. [0 or 1 / **0** / -] 0: Manual reboot, 1: Automatic reboot

5878	[Option Setup]		
001	Data Overwrite Security	-	Enables the Data Overwrite Security unit. Press "EXECUTE" on the operation panel. Then turn the machine off and on.
002	HDD Encryption	-	Installs the HDD Encryption unit.

5881	[Fixed Phrase Block Erasing]		
001	-	-	Deletes the fixed phrase.

5885	[WIM Settings] Web Image Monitor Settings		
	Close or disclose the functions of web image monitor.		
020	Document Server ACC Ctrl	*CTL	0: OFF, 1: ON Bit Meaning 0: Forbid all document server access (1) 1: Forbid user mode access (1) 2: Forbid print function (1) 3: Forbid fax TX (1) 4: Forbid scan sending (1) 5: Forbid downloading (1) 6: Forbid delete (1) 7: Reserved
050	Document Server List Def. Style	*CTL	Selects the display type for the document box list. [0 to 2 / **0** / 1] 0: Thumbnail, 1: Icon, 2: Details
051	Document Server List Def. Lines	*CTL	Sets the number of documents to be displayed in the document box list. [5 to 20 / **10** / 1]
100	Signature Setting	*CTL	Selects whether the signature is added to the scanned documents with the WIM when they are transmitted by an e-mail. [0 to 2 / 0 / 1/step] 0: Setting for each e-mail 1: Signature for all 2: No signature

101	Set Encryption	*CTL	Determines whether the scanned documents with the WIM are encrypted when they are transmitted by an e-mail. [0 to 1 / 0 / 1] 0: Not encrypted, 1:Encryption
200	Detect Mem Leak	*CTL	This SP determines how Web Image Monitor memory leaks are handled. A "1" setting enables the function. Bit 0: Displays memory status at session timeouts. Bit 1: Displays memory status at the start/end of PF handler only. Bit 2-7: Not used
201	DocSvr Timeout	*CTL	This SP sets the length of time for session timeout. The default is 30 min. The time can be reduced to shorten the time between memory leak detections. [1 to 255 / **30** / 1 min.]

5887	[SD Get Counter]		
	This SP determines whether the ROM can be updated.		
001	-	*CTL	This SP sends a text file to an SD card inserted in SD card Slot 2 (lower slot). The operation stores. The file is stored in a folder created in the root directory of the SD card called SD_COUNTER. The file is saved as a text file (*.txt) prefixed with the number of the machine. 1. Insert the SD card in SD card Slot 2 (lower slot). 2. Select SP5887 then touch [EXECUTE]. 3. Touch [Execute] in the message when you are prompted.

5888	[Personal Information Protect]		
001	-	*CTL	Selects the protection level for logs. [0 to 1 / **0** / 1} 0: No authentication, No protection for logs 1: No authentication, Protected logs (only an administrator can see the logs)

5893	[SDK Application Counter]		
	Displays the counter name of each SDK application.		
001	SDK-1	*CTL	-
002	SDK-2	*CTL	-
003	SDK-3	*CTL	-
004	SDK-4	*CTL	-
005	SDK-5	*CTL	-
006	SDK-6	*CTL	-

5894	[External Counter Setting] **DFU**		
001	Switch Charge Mode	*ENG	[0 to 2 / **0** / 1/step]

5902	[Test Print]		
001	1 Sheet Test	-	-
	Print the test pattern (selected with SP5902-003) a sheet of paper.		
002	Cont Test OFF or ON	-	-
	Print the test pattern (selected with SP5902-003) continuously until the "OFF" button is pressed.		
003	Test Pattern	-	-
	Select a test pattern.		
	0. (No print) 1. Vertical Line (1dot) 2. Vertical Line (2dot) 3. Horizontal Line (1dot) 4. Horizontal Line (2dot) 5. Grid Vertical Line 6. Grid Horizontal Line 7. Grid Pattern Small 8. Grid Pattern Large 9. Argyle Pattern Small 10. Argyle Pattern Large 11. Independent Pattern (1dot) 12. Independent Pattern (2dot) 13. Independent Pattern (4dot) 14. Trimming Area 15. Hound’s Tooth Check (Vertical)		16. Hound’s Tooth Check (Horizontal) 17. Band (Horizontal) 18. Band (Vertical) 19. Checker Flag Pattern 20. Density Pattern 21. Full Dot Pattern 22. Full White Pattern 23. Grayscale Horizontal 24. Grayscale (Horizontal Margin) 25. Grayscale Vertical 26. Grayscale (Vertical Margin) 27. Grayscale 28. Grayscale (Margin) 29. Grayscale Grid 30. Grayscale (Grid Margin)

5907	[Plug & Play Maker/Model Name]		
001	Selects the brand name and the production name for Windows Plug & Play. This information is stored in the NVRAM. If the NVRAM is defective, these names should be registered again. After selecting, press the "Original Type" key and "#" key at the same time. When the setting is completed, the beeper sounds five times.		

5913	[Switchover Permission Time]		
002	Print Application Timer	*CTL	[3 to 30 / **3** / 1 second /step]
	Sets the amount of time to elapse while the machine is in standby mode (and the operation panel keys have not been used) before another application can gain control of the display.		

5930	Meter Click Charge		
001	Meter Click Charge	*ENG	[0 or 1 / **0** / -] 0: OFF, 1: ON
	Enables or disables the Meter Charge mode. When enabling the Meter Charge mode, the “Counter” menu is added to the user menu.		
002	Life Disp: Maintenance Kit		[0 or 1 / **0** / -] 0: OFF, 1: ON
003	Life Disp: AIO		[0 or 1 / **0** / -] 0: OFF, 1: ON

5967	[Copy Server Set Function]	*CTL	**0**: ON, 1: OFF
	Enables and disables the document server. This is a security measure that prevents image data from being left in the temporary area of the HDD. After changing this setting, you must switch the main switch off and on to enable the new setting.		

5974	[Cherry Server]		
	Specifies which version of ScanRouter, “Lite” or “Full”, is installed.		
001	Cherry Server	*CTL	[0 or 1 / **0** / –] 0: Lite, 1: Full

5985	[Device Setting]	
	The NIC and USB support features are built into the GW controller. Use this SP to enable and disable these features. In order to use the NIC and USB functions built into the controller board, these SP codes must be set to "1".	
001	On Board NIC	[0 to 2 / **0** / 1 /step] 0: Disable, 1: Enable, 2: Function limitation When the "Function limitation" is set, "On board NIC" is limited only for the NRS or LDAP/NT authentication. Note ▪ Other network applications than NRS or LDAP/NT authentication are not available when this SP is set to "2". Even though you can change the initial settings of those network applications, the settings do not work.
002	On Board USB	[0 or 1 / **0** / 1/step] 0: Disable, 1: Enable

5987	[Contract Type]	
001	Brand ID 0: OFF / 1: ON	This SP detects that a mechanical counter device is removed. If it is detected, SC610 occurs.

5990	[SP print mode]	
	Prints out the SMC sheets.	
001	All (Data List)	-
002	SP (Mode Data List)	-
003	User Program	-
004	Logging Data	-
005	Diagnostic Report	-
006	Non-Default	-
007	NIB Summary	-
008	Capture Log	-
021	Copier User Program	-
022	Scanner SP	-
023	Scanner User Program	-
024	SDK/J Summary	-
025	SDK/J Application Info	-

5.7 SYSTEM SP6-XXX

5.7.1 SP6-XXX (PERIPHERALS)

6006	[ADF Adjustment]		
	Adjusts the side-to-side and leading registration of originals with the ARDF.		
001	S to S Registration: 1st	*ENG	[-3.0 to 3.0 / **0** / 0.1 mm/step]
002	S to S Registration: 2nd		
003	Leading Edge Registration	*ENG	[-5.0 to 5.0 / **0** / 0.1 mm/step]
	Adjusts the amount of paper buckle to correct original skew for the front and rear sides.		
006	Buckle: Duplex: 2nd	*ENG	[-2.5 to 2.5 / **0** / 0.1 mm/step]
	Adjusts the erase margin at the original trailing edge.		
007	Trailing Edge Erase	*ENG	[-10 to 10 / **0** / 0.1 mm/step]

6007	[ADF INPUT Check]
	Displays the signals received from the sensors and switches of the ARDF. Only Bit 0 is used for ADF input check (see "Input Check" in this section).

6008	[ADF OUTPUT Check]
	Activates the electrical components for functional check. It is not possible to activate more than one component at the same time (see "Output Check" in this section).

6009	[ADF Free Run]		
	Performs a DF free run in simplex, duplex mode or stamp mode.		
001	Free Run: Simplex Mode	-	OFF or ON
002	Free Run: Duplex Mode	-	

6017	[DF Magnification Adj.]		
	Adjusts the magnification in the sub-scan direction for the ARDF.		
001	DF Magnification Adj.	*CTL	[-5.0 to 5.0 / **0** / 0.1 %/step]

6132	[Jogger Fence Fine Adj]		
	This SP adjusts the distance between the jogger fences and the sides of the stack on the finisher stapling tray in the Finisher. The adjustment is done perpendicular to the direction of paper feed.		
003	A4 SEF	*ENG	[-1.5 to 1.5 / **0** / 0.5 mm/step] + Value: Increases distance between jogger fences and the sides of the stack. - Value: Decreases the distance between the jogger fences and the sides of the stack.
005	B5 SEF	*ENG	
008	LG SEF	*ENG	
009	LT SEF	*ENG	
012	Other	*ENG	

6137	[Finisher Free Run]		
	Execute the finisher free run.		
001	Free Run 1	*ENG	[0 to 1 / **0** / 1 /step]
002	Free Run 2		
003	Free Run 3		
004	Free Run 4		

6145	[FIN (BLO) Input Check] Finisher Input Check
	Displays the signals received from sensors and switches of the finisher (see "Input Check" in this section).

6146	[FIN (BLO) Ouput Check] Finisher Output Check
	Displays the signals received from sensors and switches of the finisher (see "Output Check" in this section).

6830	Extra Staples **DFU**		
001	0 to 50 (Initail:0)	CTL*	[0 to 50 / **0** / 1/sheet]
	Specifies the additional number of sheets for the finisher stapling.		
	Extra Suddles **Not used**		
002	0 to 50 (Initail:0)	CTL*	[0 to 50 / **0** / 1/sheet]
	Specifies the additional number of sheets for the finisher booklet stapling.		

5.8 SYSTEM SP7-XXX

5.8.1 SP7-XXX (DATA LOG)

7001	[Operation Time]		
	Displays the rotation time of the main motor.		
001	-	*ENG	[0 to 99999999 / **0** / 1/step]

7401	[Total SC Counter]		
	Displays the number of SC codes detected.		
001	-	*CTL	[0 to 9999 / **0** / 1/step]

7403	[SC History]		
	Logs the SC codes detected. The 10 most recently detected SC Codes are not displayed on the screen, but can be seen on the SMC (logging) outputs.		
001	Latest	*CTL	-
002	Latest 1		
003	Latest 2		
004	Latest 3		
005	Latest 4		
006	Latest 5		
007	Latest 6		
008	Latest 7		
009	Latest 8		
010	Latest 9		

7404	[SC991 History]		
	Logs the SC Code 991 detected. The 10 most recently detected SC Code 991 are not displayed on the screen, but can be seen on the SMC (logging) outputs.		
001	Latest	*CTL	-
002	Latest 1		
003	Latest 2		
004	Latest 3		
005	Latest 4		
006	Latest 5		
007	Latest 6		
008	Latest 7		
009	Latest 8		
010	Latest 9		

7502	[Total Paper Jam Counter]		
	Displays the total number of jams detected.		
001	-	* CTL	[0 to 9999 / **0** / 1 sheet/step]

7503	[Total Original Jam Counter]		
	Displays the total number of original jams.		
001	Original Jam Counter	* CTL	[0 to 9999 / **0** / 1 original/step]

7504	[Paper Jam Location] ON: On check, OFF: Off Check
	Displays the number of jams according to the location where jams were detected.

001	At Power On	*CTL	For details, "Jam Detection" in main chapter.
003	Tray 1: ON	*CTL	
004	Tray 2: ON	*CTL	
005	Tray 3: ON	*CTL	
006	Tray 4: ON	*CTL	
008	Bypass Tray: ON	*CTL	
009	Duplex: ON	*CTL	
013	T2 Transport: ON	*CTL	
014	T3 Transport: ON	*CTL	
017	Registration: ON	*CTL	
020	Paper Exit: ON	*CTL	
024	Inverter: ON (IN)	*CTL	
025	Inverter: ON (OUT)	*CTL	
026	Duplex Entrance: ON	*CTL	
027	Duplex Exit: ON	*CTL	
028	1bin Relay: ON	*CTL	For details, "Jam Detection" in main chapter.
029	1bin Paper Exit: ON	*CTL	
053	T2 Transport: OFF	*CTL	
054	T3 Transport: OFF	*CTL	
055	T4 Transport: OFF	*CTL	
057	Registration: OFF	*CTL	
060	Paper Exit: OFF	*CTL	
064	Inverter: OFF (IN)	*CTL	
065	Inverter: OFF (OUT)	*CTL	
066	Duplex Entrance: OFF	*CTL	

067	Duplex Exit: OFF	*CTL	
068	1bin: Relay: OFF	*CTL	
069	1bin: Paper Exit: OFF	*CTL	
230	FIN: No Exit Response	*CTL	For details, "Jam Detection" in main chapter.
240	FIN: Entrance SN: ON	*CTL	
241	FIN: Entrance SN: OFF	*CTL	
242	FIN: Paper Exit	*CTL	
243	FIN: Jogger Motor	*CTL	
244	FIN: Shift Roller Motor	*CTL	
245	FIN: Gathering Roller Motor	*CTL	
246	FiN Exit Guide Plate Motor	*CTL	
247	FiN Tray Lift Motor	*CTL	
248	FiN Stapler Motor	*CTL	
249	FiN Pick-up Solenoid	*CTL	
250	FIN: Entrance SN: OFF	*CTL	

7505	[ARDF Paper Jam Location] ON: On check, OFF: Off Check		
	Displays the number of jams according to the location where jams were detected.		
001	At Power On	*CTL	For details, "Jam Detection" in main chapter.
004	Registration: ON	*CTL	
008	Inverter: OFF	*CTL	
054	Inverter: ON	*CTL	
058	Registration: OFF	*CTL	

7506	[Jam Count by Paper Size]		
	Displays the number of jams according to the paper size.		
006	A5 LEF	*CTL	[0 to 9999 / **0** / 1 sheet/step]
044	HLT LEF		
133	A4 SEF		
134	A5 SEF		
142	B5 SEF		
164	LG SEF		
166	LT SEF		
172	HLT SEF		
255	Others		

7507	[Plotter Jam History]		
	Displays the 10 most recently detected paper jams.		
001	Latest	*CTL	-
002	Latest 1		
003	Latest 2		
004	Latest 3		
005	Latest 4		
006	Latest 5		
007	Latest 6		
008	Latest 7		
009	Latest 8		
010	Latest 9		

7508	[Original Jam History]		
	Displays the 10 most recently detected original jams.		
001	Latest	*CTL	-
002	Latest 1		
003	Latest 2		
004	Latest 3		
005	Latest 4		
006	Latest 5		
007	Latest 6		
008	Latest 7		
009	Latest 8		
010	Latest 9		

7624	[Part Replacement Operation ON/OFF]		
	Selects the PM maintenance for a part.		
001	Maintenance Kit	*CTL	[0 or 1 / **1** / -] 0: No (Not PM maintenance) 1: Yes (PM maintenance)

7801	[ROM No./Firmware Version]	
	Displays the ROM version numbers of the main machine and connected peripheral devices.	
255	-	Displays all versions and ROM numbers in the machine.

7803	[PM Counter Display]
-001 to -020	Displays the number of sheets printed for each current maintenance unit. PM counters click up based on the number of A4 (LT) LEF size sheets printed.
001	Paper
002	Fusing Unit: Pages
003	Fusing Unit: Distance
004	Fusing Unit: Usage Rate
005	Transfer Roller: Pages
006	Tranfer Roller: Distance
007	Tranfer Roller: Usage Rate
008	Feed Roller: Pages
010	Feed Roller: Usage Rate

7804	[PM Counter Reset]
	Clears the PM counter. Press the Enter key after the machine asks "Execute?", which will reset the value of the current PM counter (SP7-803) to "0".
001	Paper
002	All
003	Fusing Unit
004	Transfer Roller
005	Paper Feed Roller

7807	[SC/Jam Counter Reset]		
	Clears the counters related to SC codes and paper jams.		
001	-	*CTL	-

7826	[MF Error Counter] Japan Only
001	Error Total
002	Error Staple

7827	[MF Error Counter Clear] Japan Only

7832	[Self-Diagnose Result Display]		
	Displays the result of the diagnostics.		
001	-	*CTL	-

7836	Total Memory Size		
	Displays the memory capacity of the controller system.		
001	-	*CTL	-

7852	[DF Glass Dust Check]		
	Counts the number of occurrences (0 to 65,535) when dust was detected on the scanning glass of the ARDF or resets the dust detection counter. Counting is done only if SP4-020-1 (ARDF Scan Glass Dust Check) is switched on.		
001	Dust Detection Counter	*CTL	[0 to 9999 / - / 1 /step]
002	Dust Detection Clear Counter	*CTL	[0 to 9999 / - / 1 /step]

7901	[Assert Info]		
	Records the location where a problem is detected in the program. The data stored in this SP is used for problem analysis. **DFU**		
001	File Name	*CTL	-
002	Number of Lines		
003	Location		

7904	[Near End Timing]		
001	Maintenance Kit	*CTL	[0 to 2 / **1** / 1/step] 0: Early, **1: Normal**, 2: Late
	Selects the near end alarm timing.		

7931	[AIO Information]		
	Displays the AIO information.		
001	Machine Serial ID	*ENG	
002	Cartridge Ver	*ENG	
003	Brand ID	*ENG	
004	Area ID	*ENG	
005	Class ID	*ENG	
006	Color ID	*ENG	
007	Maintenance ID	*ENG	
008	New AIO	*ENG	
009	Recycle Count	*ENG	
010	EDP Code	*ENG	
011	Serial No.	*ENG	
012	Toner Remaining	*ENG	

013	Toner End	*ENG	
014	Refill Flag	*ENG	
015	R: Totaol Counter	*ENG	
016	E: Totaol Counter	*ENG	
017	Unit Output Counter	*ENG	
018	Install Date	*ENG	
019	Toner End Date	*ENG	
020	Conductor Time1	*ENG	
021	Conductor Time2	*ENG	
022	Conductor Time3	*ENG	
023	Conductor Time4	*ENG	

7941	[AIO Information: Log]		
001	Log1: Serial No.	*ENG	Displays the AIO information log 1.
002	Log1: Refill Flag		
003	Log1: Install Date		
004	Log1: R:Total Counter		
005	Log2: Serial No.	*ENG	Displays the AIO information log 2.
006	Log2: Refill Flag		
007	Log2: Install Date		
008	Log2: R:Total Counter		
009	Log3: Serial No.	*ENG	Displays the AIO information log 3
010	Log3: Refill Flag		
011	Log3: Install Date		
012	Log3: R:Total Counter		

013	Log4: Serial No.	*ENG	Displays the AIO information log 4.
014	Log4: Refill Flag		
015	Log4: Install Date		
016	Log4: R:Total Counter		
017	Log5: Serial No.	*ENG	Displays the AIO information log 5.
018	Log5: Refill Flag		
019	Log5: Install Date		
020	Log5: R:Total Counter		

7993	[Total Counter]		
001	-	*ENG	-
	Displays the total counter for the OEM model.		

5.9 SYSTEM SP8-XXX

5.9.1 SP8-XXX: DATA LOG2

Many of these counters are provided for features that are currently not available, such as sending color faxes, and so on. However, here are some Group 8 codes that when used in combination with others, can provide useful information.

SP Numbers	What They Do
SP8211 to SP8216	The number of pages scanned to the document server.
SP8401 to SP8406	The number of pages printed from the document server
SP8691 to SP8696	The number of pages sent from the document server

Specifically, the following questions can be answered:

- How is the document server actually being used?
- What application is using the document server most frequently?
- What data in the document server is being reused?

Most of the SPs in this group are prefixed with a letter that indicates the mode of operation (the mode of operation is referred to as an "application"). Before reading the Group 8 Service Table, make sure that you understand what these prefixes mean.

Prefixes	What it means	
T:	Total: (Grand Total).	Grand total of the items counted for all applications (C, F, P, etc.).
C:	Copy application.	Totals (pages, jobs, etc.) executed for each application when the job was not stored on the document server.
F:	Fax application.	
P:	Print application.	
S:	Scan application.	

L:	Local storage (document server)	Totals (jobs, pages, etc.) for the document server. The L: counters work differently case by case. Sometimes, they count jobs/pages stored on the document server; this can be in document server mode (from the document server window), or from another mode, such as from a printer driver or by pressing the Store File button in the Copy mode window. Sometimes, they include occasions when the user uses a file that is already on the document server. Each counter will be discussed case by case.
O:	Other applications (external network applications, for example)	Refers to network applications such as Web Image Monitor. Utilities developed with the SDK (Software Development Kit) will also be counted with this group in the future.

The Group 8 SP codes are limited to 17 characters, forced by the necessity of displaying them on the small LCDs of printers and faxes that also use these SPs. Read over the list of abbreviations below and refer to it again if you see the name of an SP that you do not understand.

Key for Abbreviations

Abbreviation	What it means
/	"By", e.g. "T:Jobs/Apl" = Total Jobs "by" Application
>	More (2> "2 or more", 4> "4 or more"
AddBook	Address Book
Apl	Application
B/W	Black & White
Bk	Black
C	Cyan
ColCr	Color Create
ColMode	Color Mode

Abbreviation	What it means
Comb	Combine
Comp	Compression
Deliv	Delivery
DesApl	Designated Application. The application (Copy, Fax, Scan, Print) used to store the job on the document server, for example.
Dev Counter	Development Count, no. of pages developed.
Dup, Duplex	Duplex, printing on both sides
Emul	Emulation
FC	Full Color
FIN	Post-print processing, i.e. finishing (punching, stapling, etc.)
Full Bleed	No Margins
GenCopy	Generation Copy Mode
GPC	Get Print Counter. For jobs 10 pages or less, this counter does not count up. For jobs larger than 10 pages, this counter counts up by the number that is in excess of 10 (e.g., for an 11-page job, the counter counts up 11-10 =1)
IFax	Internet Fax
ImgEdt	Image Edit performed on the original with the copier GUI, e.g. border removal, adding stamps, page numbers, etc.
K	Black (YMCK)
LS	Local Storage. Refers to the document server.
LSize	Large (paper) Size
Mag	Magnification
MC	One color (monochrome)

Abbreviation	What it means
NRS	New Remote Service, which allows a service center to monitor machines remotely. "NRS" is used overseas, "CSS" is used in Japan.
Org	Original for scanning
OrgJam	Original Jam
Palm 2	Print Job Manager/Desk Top Editor: A pair of utilities that allows print jobs to be distributed evenly among the printers on the network, and allows files to moved around, combined, and converted to different formats.
PC	Personal Computer
PGS	Pages. A page is the total scanned surface of the original. Duplex pages count as two pages, and A3 simplex count as two pages if the A3/DLT counter SP is switched ON.
PJob	Print Jobs
Ppr	Paper
PrtJam	Printer (plotter) Jam
PrtPGS	Print Pages
R	Red (Toner Remaining). Applies to the wide format model A2 only. This machine is under development and currently not available.
Rez	Resolution
SC	Service Code (Error SC code displayed)
Scn	Scan
Sim, Simplex	Simplex, printing on 1 side.
S-to-Email	Scan-to-E-mail
SMC	SMC report printed with SP5990. All of the Group 8 counters are recorded in the SMC report.

Abbreviation	What it means
Svr	Server
TonEnd	Toner End
TonSave	Toner Save
TXJob	Send, Transmission
YMC	Yellow, Magenta, Cyan
YMCK	Yellow, Magenta, Cyan, Black

Note

- All of the Group 8 SPs are reset with SP5 801 1 Memory All Clear.

8 001	T:Total Jobs	*CTL	These SPs count the number of times each application is used to do a job. [0 to 9999999/ **0** / 1] **Note**: The L: counter is the total number of times the other applications are used to send a job to the document server, plus the number of times a file already on the document server is used.
8 002	C:Total Jobs	*CTL	
8 003	F:Total Jobs	*CTL	
8 004	P:Total Jobs	*CTL	
8 005	S:Total Jobs	*CTL	
8 006	L:Total Jobs	*CTL	

- These SPs reveal the number of times an application is used, not the number of pages processed.
- When an application is opened for image input or output, this counts as one job.
- Interrupted jobs (paper jams, etc.) are counted, even though they do not finish.
- Only jobs executed by the customer are counted. Jobs executed by the customer engineer using the SP modes are not counted.
- When using secure printing (when a password is required to start the print job), the job is counted at the time when either "Delete Data" or "Specify Output" is specified.
- A job is counted as a fax job when the job is stored for sending.
- When a fax is received to fax memory, the F: counter increments but the L: counter does not (the document server is not used).
- A fax broadcast counts as one job for the F: counter (the fax destinations in the broadcast

are not counted separately).

- A fax broadcast is counted only after all the faxes have been sent to their destinations. If one transmission generates an error, then the broadcast will not be counted until the transmission has been completed.
- A printed fax report counts as one job for the F: counter.
- The F: counter does not distinguish between fax sending or receiving.
- When a copy job on the document server is printed, SP8022 also increments, and when a print job stored on the document server is printed, SP8024 also increments.
- When an original is both copied and stored on the document server, the C: and L: counters both increment.
- When a print job is stored on the document server, only the L: counter increments.
- When the user presses the Document Server button to store the job on the document server, only the L: counter increments.
- When the user enters document server mode and prints data stored on the document server, only the L: counter increments.
- When an image received from Palm 2 is received and stored, the L: counter increments.
- When the customer prints a report (user code list, for example), the O: counter increments. However, for fax reports and reports executed from the fax application, the F: counter increments.

8 011	T:Jobs/LS	*CTL	These SPs count the number of jobs stored to the document server by each application, to reveal how local storage is being used for input. [0 to 9999999/ **0** / 1] The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel.
8 012	C:Jobs/LS	*CTL	
8 013	F:Jobs/LS	*CTL	
8 014	P:Jobs/LS	*CTL	
8 015	S:Jobs/LS	*CTL	
8 016	L:Jobs/LS	*CTL	
8 017	O:Jobs/LS	*CTL	

- When a scan job is sent to the document server, the S: counter increments. When you enter document server mode and then scan an original, the L: counter increments.
- When a print job is sent to the document server, the P: counter increments.
- When a network application sends data to the document server, the O: counter increments.
- When an image from Palm 2 is stored on the document server, the O: counter increments.
- When a fax is sent to the document server, the F: counter increments.

8 021	T:Pjob/LS	*CTL	These SPs reveal how files printed from the document server were stored on the document server originally. [0 to 9999999/ **0** / 1] The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel.
8 022	C:Pjob/LS	*CTL	
8 023	F:Pjob/LS	*CTL	
8 024	P:Pjob/LS	*CTL	
8 025	S:Pjob/LS	*CTL	
8 026	L:Pjob/LS	*CTL	
8 027	O:Pjob/LS	*CTL	

- When a copy job stored on the document server is printed with another application, the C: counter increments.
- When an application like DeskTopBinder merges a copy job that was stored on the document server with a print job that was stored on the document server, the C: and P: counters both increment.
- When a job already on the document server is printed with another application, the L: counter increments.
- When a scanner job stored on the document server is printed with another application, the S: counter increments. If the original was scanned from within document server mode, then the L: counter increments.
- When images stored on the document server by a network application (including Palm 2), are printed with another application, the O: counter increments.
- When a copy job stored on the document server is printed with a network application (Web Image Monitor, for example), the C: counter increments.
- When a fax on the document server is printed, the F: counter increments.

8 031	T:Pjob/DesApl	*CTL	These SPs reveal what applications were used to output documents from the document server. [0 to 9999999/ **0** / 1] The L: counter counts the number of jobs printed from within the document server mode screen at the operation panel.
8 032	C:Pjob/DesApl	*CTL	
8 033	F:Pjob/DesApl	*CTL	
8 034	P:Pjob/DesApl	*CTL	
8 035	S:Pjob/DesApl	*CTL	
8 036	L:Pjob/DesApl	*CTL	
8 037	O:Pjob/DesApl	*CTL	

- When documents already stored on the document server are printed, the count for the application that started the print job is incremented.
- When the print job is started from a network application (Desk Top Binder, Web Image Monitor, etc.) the L: counter increments.

8 041	T:TX Jobs/LS	*CTL	These SPs count the applications that stored files on the document server that were later accessed for transmission over the telephone line or over a network (attached to an e-mail, or as a fax image by I-Fax). [0 to 9999999/ **0** / 1] **Note**: Jobs merged for sending are counted separately. The L: counter counts the number of jobs scanned from within the document server mode screen at the operation panel.
8 042	C:TX Jobs/LS	*CTL	
8 043	F:TX Jobs/LS	*CTL	
8 044	P:TX Jobs/LS	*CTL	
8 045	S:TX Jobs/LS	*CTL	
8 046	L:TX Jobs/LS	*CTL	
8 047	O:TX Jobs/LS	*CTL	

- When a stored copy job is sent from the document server, the C: counter increments.
- When images stored on the document server by a network application or Palm2 are sent as an e-mail, the O: counter increments.

8 051	T:TX Jobs/DesApl	*CTL	These SPs count the applications used to send files from the document server over the telephone line or over a network (attached to an e-mail, or as a fax image by I-Fax). Jobs merged for sending are counted separately. [0 to 9999999/ **0** / 1] The L: counter counts the number of jobs sent from within the document server mode screen at the operation panel.
8 052	C:TX Jobs/DesApl	*CTL	
8 053	F:TX Jobs/DesApl	*CTL	
8 054	P:TX Jobs/DesApl	*CTL	
8 055	S:TX Jobs/DesApl	*CTL	
8 056	L:TX Jobs/DesApl	*CTL	
8 057	O:TX Jobs/DesApl	*CTL	

- If the send is started from Desk Top Binder or Web Image Monitor, for example, then the O: counter increments.

8 061	T:FIN Jobs	*CTL	[0 to 9999999/ **0** / 1]
	These SPs total the finishing methods. The finishing method is specified by the application.		
8 062	C:FIN Jobs	*CTL	[0 to 9999999/ **0** / 1]
	These SPs total finishing methods for copy jobs only. The finishing method is specified by the application.		
8 063	F:FIN Jobs	*CTL	[0 to 9999999/ **0** / 1]
	These SPs total finishing methods for fax jobs only. The finishing method is specified by the application. **Note**: Finishing features for fax jobs are not available at this time.		
8 064	P:FIN Jobs	*CTL	[0 to 9999999/ **0** / 1]
	These SPs total finishing methods for print jobs only. The finishing method is specified by the application.		
8 065	S:FIN Jobs	*CTL	[0 to 9999999/ **0** / 1]
	These SPs total finishing methods for scan jobs only. The finishing method is specified by the application. **Note**: Finishing features for scan jobs are not available at this time.		
8 066	L:FIN Jobs	*CTL	[0 to 9999999/ **0** / 1]
	These SPs total finishing methods for jobs output from within the document server mode screen at the operation panel. The finishing method is specified from the print window within document server mode.		
8 067	O:FIN Jobs	*CTL	[0 to 9999999/ **0** / 1]
	These SPs total finishing methods for jobs executed by an external application, over the network. The finishing method is specified by the application.		
8 06x 1	Sort	Number of jobs started in Sort mode. When a stored copy job is set for Sort and then stored on the document server, the L: counter increments. (See SP8 066 1)	
8 06x 2	Stack	Number of jobs started out of Sort mode.	

8 06x 3	Staple	Number of jobs started in Staple mode.
8 06x 4	Booklet	Not used
8 06x 5	Z-Fold	Not used
8 06x 6	Punch	Number of jobs started in Punch mode. When Punch is set for a print job, the P: counter increments. (See SP8 064 6.)
8 06x 7	Other	Reserved. Not used.
8 06x 8	Inside-Fold	Not used
8 06x 9	Three-IN-Fold	Not used
8 06x 10	Three-OUT-Fold	Not used
8 06x 11	Four-Fold	Not used
8 06x 12	KANNON-Fold	Not used
8 06x 13	Perfect-Bind	Not used
8 06x 14	Ring-Bind	Not used

8 071	T:Jobs/PGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of jobs broken down by the number of pages in the job, regardless of which application was used.		
8 072	C:Jobs/PGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count and calculate the number of copy jobs by size based on the number of pages in the job.		
8 073	F:Jobs/PGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count and calculate the number of fax jobs by size based on the number of pages in the job.		
8 074	P:Jobs/PGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count and calculate the number of print jobs by size based on the number of pages in the job.		

8 075	S:Jobs/PGS		[0 to 9999999/ **0** / 1]
	These SPs count and calculate the number of scan jobs by size based on the number of pages in the job.		
8 076	L:Jobs/PGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count and calculate the number of jobs printed from within the document server mode window at the operation panel, by the number of pages in the job.		
8 077	O:Jobs/PGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count and calculate the number of "Other" application jobs (Web Image Monitor, Palm 2, etc.) by size based on the number of pages in the job.		

8 07x 1	1 Page	8 07x 8	21 to 50 Pages
8 07x 2	2 Pages	8 07x 9	51 to 100 Pages
8 07x 3	3 Pages	8 07x 10	101 to 300 Pages
8 07x 4	4 Pages	8 07x 11	301 to 500 Pages
8 07x 5	5 Pages	8 07x 12	501 to 700 Pages
8 07x 6	6 to 10 Pages	8 07x 13	701 to 1000 Pages
8 07x 7	11 to 20 Pages	8 07x 14	1001 to Pages

- For example: When a copy job stored on the document server is printed in document server mode, the appropriate L: counter (SP8076 0xx) increments.
- Printing a fax report counts as a job and increments the F: counter (SP 8073).
- Interrupted jobs (paper jam, etc.) are counted, even though they do not finish.
- If a job is paused and re-started, it counts as one job.
- If the finisher runs out of staples during a print and staple job, then the job is counted at the time the error occurs.
- For copy jobs (SP 8072) and scan jobs (SP 8075), the total is calculated by multiplying the number of sets of copies by the number of pages scanned. (One duplex page counts as 2.)
- The first test print and subsequent test prints to adjust settings are added to the number of pages of the copy job (SP 8072).
- When printing the first page of a job from within the document server screen, the page is counted.

8 111	T:FAX TX Jobs	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of jobs (color or black-and-white) sent by fax, either directly or using a file stored on the document server, on a telephone line. **Note**: Color fax sending is not available at this time.		
8 113	F: FAX TX Jobs	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of jobs (color or black-and-white) sent by fax directly on a telephone line. **Note**: Color fax sending is not available at this time.		
8 11x 1	B/W		

- These counters count jobs, not pages.
- This SP counts fax jobs sent over a telephone line with a fax application, including documents stored on the document server.
- If the mode is changed during the job, the job will count with the mode set when the job started.
- If the same document is faxed to both a public fax line and an I-Fax at a destination where both are available, then this counter increments, and the I-Fax counter (8 12x) also increments.
- The fax job is counted when the job is scanned for sending, not when the job is sent.

8 121	T:IFAX TX Jobs	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of jobs (color or black-and-white) sent, either directly or using a file stored on the document server, as fax images using I-Fax. **Note**: Color fax sending is not available at this time.		
8 123	F: IFAX TX Jobs	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of jobs (color or black-and-white) sent (not stored on the document server), as fax images using I-Fax. **Note**: Color fax sending is not available at this time.		
8 12x 1	B/W		

- These counters count jobs, not pages.
- The counters for color are provided for future use; the color fax feature is not available at this time.
- The fax job is counted when the job is scanned for sending, not when the job is sent.

8 131	T:S-to-Email Jobs	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of jobs (color or black-and-white) scanned and attached to an e-mail, regardless of whether the document server was used or not.		
8 135	S: S-to-Email Jobs	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of jobs (color or black-and-white) scanned and attached to e-mail, without storing the original on the document server.		
8 13x 1	B/W		
8 13x 2	Color		
8 13x 3	ACS		

- These counters count jobs, not pages.
- If the job is stored on the document server, after the job is stored it is determined to be color or black-and-white then counted.
- If the job is cancelled during scanning, or if the job is cancelled while the document is waiting to be sent, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- If several jobs are combined for sending to the Scan Router, Scan-to-Email, or Scan-to-PC, or if one job is sent to more than one destination. each send is counted separately. For example, if the same document is sent by Scan-to-Email as well as Scan-to-PC, then it is counted twice (once for Scan-to-Email and once for Scan-to-PC).

8 141	T:Deliv Jobs/Svr	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of jobs (color or black-and-white) scanned and sent to a Scan Router server.		
8 145	S: Deliv Jobs/Svr	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of jobs (color or black-and-white) scanned in scanner mode and sent to a Scan Router server.		
8 14x 1	B/W		
8 14x 2	Color		
8 14x 3	ACS		

- These counters count jobs, not pages.
- The jobs are counted even though the arrival and reception of the jobs at the Scan Router server cannot be confirmed.
- If even one color image is mixed with black-and-white images, then the job is counted as a "Color" job.
- If the job is cancelled during scanning, or if the job is cancelled while the document is waiting to be delivered, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- Even if several files are combined for sending, the transmission counts as one job.

8 151	T:Deliv Jobs/PC	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of jobs (color or black-and-white) scanned and sent to a folder on a PC (Scan-to-PC). **Note**: At the present time, 8 151 and 8 155 perform identical counts.		
8 155	S:Deliv Jobs/PC	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of jobs (color or black-and-white) scanned and sent with Scan-to-PC.		
8 15x 1	B/W		
8 15x 2	Color		
8 15x 3	ACS		

- These counters count jobs, not pages.
- If the job is cancelled during scanning, it is not counted.
- If the job is cancelled while it is waiting to be sent, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- Even if several files are combined for sending, the transmission counts as one job.

8 161	T:PCFAX TX Jobs	*CTL	These SPs count the number of PC Fax transmission jobs. A job is counted from when it is registered for sending, not when it is sent. [0 to 9999999/ **0** / 1] **Note**: At the present time, these counters perform identical counts.
8 163	F:PCFAX TX Jobs	*CTL	

- This counts fax jobs started from a PC using a PC fax application, and sending the data out to the destination from the PC through the copier.

8 171	T:Deliv Jobs/WSD	*CTL	These SPs count the pages scanned by WS. [0 to 9999999/ **0** / 1]
8 175	S:Deliv Jobs/WSD	*CTL	
-001	B/W		
-002	Color		
-003	ACS		

8 181	T:Scan to Media Jobs	*CTL	These SPs count the scanned pages in a media by the scanner application. [0 to 9999999/ **0** / 1]
8 185	S:Scan to Media Jobs	*CTL	
-001	B/W		
-002	Color		
-003	ACS		

8 191	T:Total Scan PGS	*CTL	These SPs count the pages scanned by each application that uses the scanner to scan images. [0 to 9999999/ **0** / 1]
8 192	C:Total Scan PGS	*CTL	
8 193	F:Total Scan PGS	*CTL	
8 195	S:Total Scan PGS	*CTL	
8 196	L:Total Scan PGS	*CTL	

- SP 8 191 to 8 196 count the number of scanned sides of pages, not the number of physical pages.
- These counters do not count reading user stamp data, or reading color charts to adjust color.
- Previews done with a scanner driver are not counted.
- A count is done only after all images of a job have been scanned.
- Scans made in SP mode are not counted.

Examples

- If both sides of 3 A4 sheets are copied and stored to the document server using the Store

File button in the Copy mode window, the C: count is 6 and the L: count is 6.

- If both sides of 3 A4 sheets are copied but not stored, the C: count is 6.
- If you enter document server mode then scan 6 pages, the L: count is 6.

8 201	T:LSize Scan PGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of large pages input with the scanner for scan and copy jobs. Large size paper (A3/DLT) scanned for fax transmission are not counted. **Note**: These counters are displayed in the SMC Report, and in the User Tools display.		
8 203	F: LSize Scan PGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of large pages input with the scanner for fax transmission. **Note**: These counters are displayed in the SMC Report, and in the User Tools display.		
8 205	S:LSize Scan PGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of large pages input with the scanner for scan jobs only. Large size paper (A3/DLT) scanned for fax transmission are not counted. **Note**: These counters are displayed in the SMC Report, and in the User Tools display.		

8 211	T:Scan PGS/LS	*CTL	These SPs count the number of pages scanned into the document server . [0 to 9999999/ **0** / 1] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen
8 212	C:Scan PGS/LS	*CTL	
8 213	F:Scan PGS/LS	*CTL	
8 215	S:Scan PGS/LS	*CTL	
8 216	L:Scan PGS/LS	*CTL	

- Reading user stamp data is not counted.
- If a job is cancelled, the pages output as far as the cancellation are counted.
- If the scanner application scans and stores 3 B5 sheets and 1 A4 sheet, the S: count is 4.
- If pages are copied but not stored on the document server, these counters do not change.
- If both sides of 3 A4 sheets are copied and stored to the document server, the C: count is 6 and the L: count is 6.
- If you enter document server mode then scan 6 pages, the L: count is 6.

8 221	ADF Org Feeds	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of pages fed through the ADF for front and back side scanning.		
8 221 1	Front	Number of front sides fed for scanning: With an ADF that can scan both sides simultaneously, the Front side count is the same as the number of pages fed for either simplex or duplex scanning. With an ADF that cannot scan both sides simultaneously, the Front side count is the same as the number of pages fed for duplex front side scanning. (The front side is determined by which side the user loads face up.)	
8 221 2	Back	Number of rear sides fed for scanning: With an ADF that can scan both sides simultaneously, the Back count is the same as the number of pages fed for duplex scanning. With an ADF that cannot scan both sides simultaneously, the Back count is the same as the number of pages fed for duplex rear-side scanning.	

- When 1 sheet is fed for duplex scanning the Front count is 1 and the Back count is 1.
- If a jam occurs during the job, recovery processing is not counted to avoid double counting. Also, the pages are not counted if the jam occurs before the first sheet is output.

8 231	Scan PGS/Mode	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of pages scanned by each ADF mode to determine the work load on the ADF.		
8 231 1	Large Volume	Selectable. Large copy jobs that cannot be loaded in the ADF at one time.	
8 231 2	SADF	Selectable. Feeding pages one by one through the ADF.	
8 231 3	Mixed Size	Selectable. Select "Mixed Sizes" on the operation panel.	
8 231 4	Custom Size	Selectable. Originals of non-standard size.	
8 231 5	Platen	Book mode. Raising the ADF and placing the original directly on the platen.	
8 231 6	Mixed 1side/ 2side	Simplex and Duplex mode.	

- If the scan mode is changed during the job, for example, if the user switches from ADF to Platen mode, the count is done for the last selected mode.
- The user cannot select mixed sizes or non-standard sizes with the fax application so if the original's page sizes are mixed or non-standard, these are not counted.
- If the user selects "Mixed Sizes" for copying in the platen mode, the Mixed Size count is enabled.
- In the SADF mode if the user copies 1 page in platen mode and then copies 2 pages with SADF, the Platen count is 1 and the SADF count is 3.

8 241	T:Scan PGS/Org	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of scanned pages by original type for all jobs, regardless of which application was used.		
8 242	C:Scan PGS/Org	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of pages scanned by original type for Copy jobs.		
8 243	F:Scan PGS/Org	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of pages scanned by original type for Fax jobs.		
8 245	S:Scan PGS/Org	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of pages scanned by original type for Scan jobs.		
8 246	L:Scan PGS/Org	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of pages scanned and stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen		

	8 241	**8 242**	**8 243**	**8 245**	**8 246**
8 24x 1: Text	Yes	Yes	Yes	Yes	Yes
8 24x 2: Text/Photo	Yes	Yes	Yes	Yes	Yes
8 24x 3: Photo	Yes	Yes	Yes	Yes	Yes
8 24x 4: GenCopy, Pale	Yes	Yes	No	Yes	Yes
8 24x 5: Map	Yes	Yes	No	Yes	Yes
8 24x 6: Normal/Detail	Yes	No	Yes	No	No
8 24x 7: Fine/Super Fine	Yes	No	Yes	No	No
8 24x 8: Binary	Yes	No	No	Yes	No
8 24x 9: Grayscale	Yes	No	No	Yes	No

8 24x 10: Color	Yes	No	No	Yes	No
8 24x 11: Other	Yes	Yes	Yes	Yes	Yes

- If the scan mode is changed during the job, for example, if the user switches from ADF to Platen mode, the count is done for the last selected mode.

8 251	T:Scan PGS/ImgEdt	*CTL	These SPs show how many times Image Edit features have been selected at the operation panel for each application. Some examples of these editing features are: ▪ Erase> Border ▪ Erase> Center ▪ Image Repeat ▪ Centering ▪ Positive/Negative [0 to 9999999/ **0** / 1] Note: The count totals the number of times the edit features have been used. A detailed breakdown of exactly which features have been used is not given.
8 252	C:Scan PGS/ImgEdt	*CTL	
8 254	P:Scan PGS/ImgEdt	*CTL	
8 255	S : Scan PGS/ImgEdr	*CTL	
8 256	L:Scan PGS/ImgEdt	*CTL	
8 257	O:Scan PGS/ImgEdt	*CTL	

The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen.

8 281	T:Scan PGS/TWAIN	*CTL	These SPs count the number of pages scanned using a TWAIN driver. These counters reveal how the TWAIN driver is used for delivery functions. [0 to 9999999/ **0** / 1] **Note**: At the present time, these counters perform identical counts.
8 285	S:Scan PGS/TWAIN	*CTL	

8 291	T:Scan PGS/Stamp	*CTL	These SPs count the number of pages stamped with the stamp in the ADF unit.
8 293	F:Scan PGS/Stamp	*CTL	

8 295	S:Scan PGS/Stamp	*CTL	[0 to 9999999/ **0** / 1] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen

8 301	T:Scan PGS/Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by size the total number of pages scanned by all applications. Use these totals to compare original page size (scanning) and output (printing) page size [SP 8-441].		
8 302	C:Scan PGS/Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by size the total number of pages scanned by the Copy application. Use these totals to compare original page size (scanning) and output (printing) page size [SP 8-442].		
8 303	F:Scan PGS/Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by size the total number of pages scanned by the Fax application. Use these totals to compare original page size (scanning) and output page size [SP 8-443].		
8 305	S:Scan PGS/Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by size the total number of pages scanned by the Scan application. Use these totals to compare original page size (scanning) and output page size [SP 8-445].		
8 306	L:Scan PGS/Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by size the total number of pages scanned and stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen. Use these totals to compare original page size (scanning) and output page size [SP 8-446].		
8 30x 1	A3	-	
8 30x 2	A4		

8 30x 3	A5	
8 30x 4	B4	
8 30x 5	B5	
8 30x 6	DLT	
8 30x 7	LG	
8 30x 8	LT	
8 30x 9	HLT	
8 30x 10	Full Bleed	
8 30x 254	Other (Standard)	
8 30x 255	Other (Custom)	

8 311	T:Scan PGS/Rez	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by resolution setting the total number of pages scanned by applications that can specify resolution settings.		
8 315	S: Scan PGS/Rez	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by resolution setting the total number of pages scanned by applications that can specify resolution settings. **Note**: At the present time, SP8-311 and SP8-315 perform identical counts.		
8 31x 1	1200dpi <		
8 31x 2	600dpi to 1199dpi		
8 31x 3	400dpi to 599dpi		
8 31x 4	200dpi to 399dpi		
8 31x 5	< 199dpi		

- Copy resolution settings are fixed so they are not counted.
- The Fax application does not allow finely-adjusted resolution settings so no count is done for the Fax application.

8 381	T:Total PrtPGS	*CTL	These SPs count the number of pages printed by the customer. The counter for the application used for storing the pages increments. [0 to 9999999/ **0** / 1] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel. Pages stored with the Store File button from within the Copy mode screen go to the C: counter.
8 382	C:Total PrtPGS	*CTL	
8 383	F:Total PrtPGS	*CTL	
8 384	P:Total PrtPGS	*CTL	
8 385	S:Total PrtPGS	*CTL	
8 386	L:Total PrtPGS	*CTL	
8 387	O:Total PrtPGS	*CTL	

- When several documents are merged for a print job, the number of pages stored are counted for the application that stored them.
- These counters are used primarily to calculate charges on use of the machine, so the following pages are not counted as printed pages:
  - Blank pages in a duplex printing job.
  - Blank pages inserted as document covers, chapter title sheets, and slip sheets.
  - Reports printed to confirm counts.
  - All reports done in the service mode (service summaries, engine maintenance reports, etc.)
  - Test prints for machine image adjustment.
  - Error notification reports.
  - Partially printed pages as the result of a copier jam.

8 391	LSize PrtPGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count pages printed on paper sizes A3/DLT and larger. **Note**: In addition to being displayed in the SMC Report, these counters are also displayed in the User Tools display on the copy machine.		

8 401	T:PrtPGS/LS	*CTL	These SPs count the number of pages printed from the document server. The counter for the application used to print the pages is incremented. The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel. [0 to 9999999/ **0** / 1]
8 402	C:PrtPGS/LS	*CTL	
8 403	F:PrtPGS/LS	*CTL	
8 404	P:PrtPGS/LS	*CTL	
8 405	S:PrtPGS/LS	*CTL	
8 406	L:PrtPGS/LS	*CTL	

- Print jobs done with Web Image Monitor and Desk Top Binder are added to the L: count.
- Fax jobs done with Web Image Monitor and Desk Top Binder are added to the F: count.

8 411	Prints/Duplex	*CTL	This SP counts the amount of paper (front/back counted as 1 page) used for duplex printing. Last pages printed only on one side are not counted. [0 to 9999999/ **0** / 1]

8 421	T:PrtPGS/Dup Comb	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing. This is the total for all applications.		
8 422	C:PrtPGS/Dup Comb	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the copier application.		
8 423	F:PrtPGS/Dup Comb	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the fax application.		
8 424	P:PrtPGS/Dup Comb	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the printer application.		
8 425	S:PrtPGS/Dup Comb	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the scanner application.		
8 426	L:PrtPGS/Dup Comb	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing from within the document server mode window at the operation panel.		
8 427	O:PrtPGS/Dup Comb	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by Other applications		
8 42x 1	Simplex> Duplex		
8 42x 4	Simplex Combine		
8 42x 5	Duplex Combine		
8 42x 6	2>	2 pages on 1 side (2-Up)	
8 42x 7	4>	4 pages on 1 side (4-Up)	

8 42x 9	8>	8 pages on 1 side (8-Up)
8 42x 10	9>	9 pages on 1 side (9-Up)
8 42x 11	16>	16 pages on 1 side (16-Up)
8 42x 12	Booklet	
8 42x 13	Magazine	

- These counts (SP8 421 to SP8 427) are especially useful for customers who need to improve their compliance with ISO standards for the reduction of paper consumption.
- Pages that are only partially printed with the n-Up functions are counted as 1 page.
- Here is a summary of how the counters work for Booklet and Magazine modes:

Booklet			**Magazine**	
Original Pages	**Count**		**Original Pages**	**Count**
1	1		1	1
2	2		2	2
3	2		3	2
4	2		4	2
5	3		5	4
6	4		6	4
7	4		7	4
8	4		8	4

8 431	T:PrtPGS/ImgEdt	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of pages output with the three features below, regardless of which application was used.		
8 432	C:PrtPGS/ImgEdt	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of pages output with the three features below with the copy application.		
8 434	P:PrtPGS/ImgEdt	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of pages output with the three features below with the print application.		
8 436	L:PrtPGS/ImgEdt	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of pages output from within the document server mode window at the operation panel with the three features below.		
8 437	O:PrtPGS/ImgEdt	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of pages output with the three features below with Other applications.		
8 43x 1	Cover/Slip Sheet	Total number of covers or slip sheets inserted. The count for a cover printed on both sides counts 2.	
8 43x 2	Series/Book	The number of pages printed in series (one side) or printed as a book with booklet right/left pagination.	
8 43x 3	User Stamp	The number of pages printed where stamps were applied, including page numbering and date stamping.	

8 441	T:PrtPGS/Ppr Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by all applications.		
8 442	C:PrtPGS/Ppr Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by the copy application.		
8 443	F:PrtPGS/Ppr Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by the fax application.		
8 444	P:PrtPGS/Ppr Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by the printer application.		
8 445	S:PrtPGS/Ppr Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by the scanner application.		
8 446	L:PrtPGS/Ppr Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed from within the document server mode window at the operation panel.		
8 447	O:PrtPGS/Ppr Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by Other applications.		
8 44x 1	A3		
8 44x 2	A4		
8 44x 3	A5		
8 44x 4	B4		
8 44x 5	B5		
8 44x 6	DLT		

8 44x 7	LG	
8 44x 8	LT	
8 44x 9	HLT	
8 44x 10	Full Bleed	
8 44x 254	Other (Standard)	
8 44x 255	Other (Custom)	

- These counters do not distinguish between LEF and SEF.

8 451	PrtPGS/Ppr Tray	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of sheets fed from each paper feed station.		
8 451 1	Bypass Tray	Bypass Tray	
8 451 2	Tray 1	Machine	
8 451 3	Tray 2	Paper Tray Unit (Option)	
8 451 4	Tray 3	Paper Tray Unit (Option)	
8 451 5	Tray 4	Paper Tray Unit (Option)	
8 451 6	Tray 5	Not used	
8 451 7	Tray 6	Not used	
8 451 8	Tray 7	Not used	
8 451 9	Tray 8	Not used	
8 451 10	Tray 9	Not used	
8 451 11	Tray10	Not used	
8 451 12	Tray11	Not used	
8 451 13	Tray12	Not used	
8 451 14	Tray13	Not used	
8 451 15	Tray14	Not used	

8 451 16	Tray15	Not used

8 461	T:PrtPGS/Ppr Type	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by paper type the number pages printed by all applications. ▪ These counters are not the same as the PM counter. The PM counter is based on feed timing to accurately measure the service life of the feed rollers. However, these counts are based on output timing. ▪ Blank sheets (covers, chapter covers, slip sheets) are also counted. ▪ During duplex printing, pages printed on both sides count as 1, and a page printed on one side counts as 1.		
8 462	C:PrtPGS/Ppr Type	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by paper type the number pages printed by the copy application.		
8 463	F:PrtPGS/Ppr Type	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by paper type the number pages printed by the fax application.		
8 464	P:PrtPGS/Ppr Type	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by paper type the number pages printed by the printer application.		
8 466	L:PrtPGS/Ppr Type	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by paper type the number pages printed from within the document server mode window at the operation panel.		
8 46x 1	Normal		
8 46x 2	Recycled		
8 46x 3	Special		
8 46x 4	Thick		
8 46x 5	Normal (Back)		
8 46x 6	Thick (Back)		

8 46x 7	OHP
8 46x 8	Other

8 471	PrtPGS/Mag	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by magnification rate the number of pages printed.		
8 471 1	< 49%		
8 471 2	50% to 99%		
8 471 3	100%		
8 471 4	101% to 200%		
8 471 5	201% <		

- Counts are done for magnification adjusted for pages, not only on the operation panel but performed remotely with an external network application capable of performing magnification adjustment as well.
- Magnification adjustments done with printer drivers with PC applications such as Excel are also counted.
- Magnification adjustments done for adjustments after they have been stored on the document server are not counted.
- Magnification adjustments performed automatically during Auto Reduce/Enlarge copying are counted.
- The magnification rates of blank cover sheets, slip sheets, etc. are automatically assigned a rate of 100%.

8 481	T:PrtPGS/TonSave	*CTL	
8 484	P:PrtPGS/TonSave	*CTL	
	These SPs count the number of pages printed with the Toner Save feature switched on. **Note**: These SPs return the same results as this SP is limited to the Print application. [0 to 9999999/ **0** / 1]		

8 511	T:PrtPGS/Emul	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by printer emulation mode the total number of pages printed.		
8 514	P:PrtPGS/Emul	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by printer emulation mode the total number of pages printed.		
8 51x 1	RPCS		
8 51x 2	RPDL		
8 51x 3	PS3		
8 51x 4	R98		
8 51x 5	R16		
8 51x 6	GL/GL2		
8 51x 7	R55		
8 51x 8	RTIFF		
8 51x 9	PDF		
8 51x 10	PCL5e/5c		
8 51x 11	PCL XL		
8 51x 12	IPDL-C		
8 51x 13	BM-Links	Japan Only	

8 51x 14	Other	
8 51x 15	IPDS	

- SP8 511 and SP8 514 return the same results as they are both limited to the Print application.
- Print jobs output to the document server are not counted.

8 521	T:PrtPGS/FIN	*CTL	[0 to 9999999 / **0** / 1]
	These SPs count by finishing mode the total number of pages printed by all applications.		
8 522	C:PrtPGS/FIN	*CTL	[0 to 9999999 / **0** / 1]
	These SPs count by finishing mode the total number of pages printed by the Copy application.		
8 523	F:PrtPGS/FIN	*CTL	[0 to 9999999 / **0** / 1]
	These SPs count by finishing mode the total number of pages printed by the Fax application. **NOTE**: Print finishing options for received faxes are currently not available.		
8 524	P:PrtPGS/FIN	*CTL	[0 to 9999999 / **0** / 1]
	These SPs count by finishing mode the total number of pages printed by the Print application.		
8 525	S:PrtPGS/FIN	*CTL	[0 to 9999999 / **0** / 1]
	These SPs count by finishing mode the total number of pages printed by the Scanner application.		
8 526	L:PrtPGS/FIN	*CTL	[0 to 9999999 / **0** / 1]
	These SPs count by finishing mode the total number of pages printed from within the document server mode window at the operation panel.		
8 52x 1	Sort		
8 52x 2	Stack		

8 52x 3	Staple
8 52x 4	Booklet (not used)
8 52x 5	Z-Fold (not used)
8 52x 6	Punch
8 52x 7	Other
8 52x 8	Inside-Fold (not used)
8 52x 9	Three-IN-Fold (not used)
8 52x 10	Three-OUT-Fold (not used)
8 52x 11	Four-Fold (not used)
8 52x 12	KANNON-Fold (not used)
8 52x 13	Perfect-Bind (not used)
8 52x 14	Ring-Bind (not used)

Note

- If stapling is selected for finishing and the stack is too large for stapling, the unstapled pages are still counted.
- The counts for staple finishing are based on output to the staple tray, so jam recoveries are counted.

8 531	Staples	*CTL	This SP counts the amount of staples used by the machine. [0 to 9999999 / **0** / 1]

8 551	T:FIN Books (not used)	*CTL	Not used
8 551 1	Perfect-Bind		
8 551 2	Ring-Bind		

8 552	C:Prt Books/ FIN (not used)	*CTL	Not used
8 552 1	Perfect-Bind		
8 552 2	Ring-Bind		

8 554	T:FIN Books (not used)	*CTL	Not used
8 554 1	Perfect-Bind		
8 554 2	Ring-Bind		

8 556	L:Prt Books/ FIN (not used)	*CTL	Not used
8 552 6	Perfect-Bind		
8 552 6	Ring-Bind		

8 581	T:Counter	*CTL	[0 to 9999999 / **0** / 1]
	These SPs count the total output broken down by color output, regardless of the application used. In addition to being displayed in the SMC Report, these counters are also displayed in the User Tools display on the copy machine.		

8 581 1	Total

8 591	O:Counter	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the totals for number of duplex pages printed. These totals are for Other (O:) applications only.		
8 591 1	A3/DLT (not used)	-	
8 591 2	Duplex		

8 601	Coverage Counter	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total coverage for each color and the total printout pages for each printing mode.		
8 601 1	B/W	-	
8 601 11	B/W Printing Pages		

8 617	SDK Apli Counter	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total printout pages for each SDK applicaion.		
8 617 1	SDK-1	-	
8 617 2	SDK-2		
8 617 3	SDK-3		
8 617 4	SDK-4		
8 617 5	SDK-5		
8 617 6	SDK-6		

8 621	Func Use Counter	*CTL	-
001 to 064	Function-001 to Function-064		

8 631	T:FAX TX PGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by color mode the number of pages sent by fax to a telephone number.		
8 633	F:FAX TX PGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by color mode the number of pages sent by fax to a telephone number.		
8 63x 1	B/W		

- If a document has color and black-and-white pages mixed, the pages are counted separately as B/W or Color.
- At the present time, this feature is provided for the Fax application only so SP8631 and SP8633 are the same.
- The counts include error pages.
- If a document is sent to more than one destination with a Group transmission, the count is done for each destination.
- Polling transmissions are counted but polling RX are not.
- Relay, memory, and confidential mailbox transmissions and are counted for each destination.

8 641	T:IFAX TX PGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by color mode the number of pages sent by fax to as fax images using I-Fax.		
8 643	F:IFAX TX PGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by color mode the number of pages sent by Fax as fax images using I-Fax.		
8 64x 1	B/W		

- If a document has color and black-and-white pages mixed, the pages are counted separately as B/W or Color.
- At the present time, this feature is provided for the Fax application only so SP8641 and SP8643 are the same.
- The counts include error pages.
- If a document is sent to more than one destination with a Group transmission, the count is done for each destination.
- Polling transmissions are counted but polling RX are not.
- Relay, memory, and confidential mailbox transmissions and are counted for each destination.

8 651	T:S-to-Email PGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by color mode the total number of pages attached to an e-mail for both the Scan and document server applications.		
8 655	S:S-to-Email PGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by color mode the total number of pages attached to an e-mail for the Scan application only.		
8 65x 1	B/W		
8 65x 2	Color		

Note

- The count for B/W and Color pages is done after the document is stored on the HDD. If the job is cancelled before it is stored, the pages are not counted.
- If Scan-to-Email is used to send a 10-page document to 5 addresses, the count is 10

(the pages are sent to the same SMTP server together).

- If Scan-to-PC is used to send a 10-page document to 5 folders, the count is 50 (the document is sent to each destination of the SMB/FTP server).
- Due to restrictions on some devices, if Scan-to-Email is used to send a 10-page document to a large number of destinations, the count may be divided and counted separately. For example, if a 10-page document is sent to 200 addresses, the count is 10 for the first 100 destinations and the count is also 10 for the second 100 destinations, for a total of 20.).

<table>
<tr><td rowspan="2">8 661</td><td>T:Deliv PGS/Svr</td><td>*CTL</td><td>[0 to 9999999/ 0 / 1]</td></tr>
<tr><td colspan="3">These SPs count by color mode the total number of pages sent to a Scan Router server by both Scan and LS applications.</td></tr>
<tr><td rowspan="2">8 665</td><td>S:Deliv PGS/Svr</td><td>*CTL</td><td>[0 to 9999999/ 0 / 1]</td></tr>
<tr><td colspan="3">These SPs count by color mode the total number of pages sent to a Scan Router server by the Scan application.</td></tr>
<tr><td>8 66x 1</td><td colspan="3">B/W</td></tr>
<tr><td>8 66x 2</td><td colspan="3">Color</td></tr>
</table>

Note

- The B/W and Color counts are done after the document is stored on the HDD of the Scan Router server.
- If the job is canceled before storage on the Scan Router server finishes, the counts are not done.
- The count is executed even if regardless of confirmation of the arrival at the Scan Router server.

8 671	T:Deliv PGS/PC	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by color mode the total number of pages sent to a folder on a PC (Scan-to-PC) with the Scan and LS applications.		
8 675	S: Deliv PGS/PC	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by color mode the total number of pages sent with Scan-to-PC with the Scan application.		
8 67x 1	B/W		
8 67x 2	Color		

8 681	T:PCFAX TXPGS	*CTL	These SPs count the number of pages sent by PC Fax. These SPs are provided for the Fax application only, so the counts for SP8 681 and SP8 683 are the same. [0 to 9999999/ **0** / 1]
8 683	F:PCFAX TXPGS	*CTL	

- This counts pages sent from a PC using a PC fax application, from the PC through the copier to the destination.
- When sending the same message to more than one place using broadcasting, the pages are only counted once. (For example, a 10-page fax is sent to location A and location B. The counter goes up by 10, not 20.)

8 691	T:TX PGS/LS	*CTL	These SPs count the number of pages sent from the document server. The counter for the application that was used to store the pages is incremented. [0 to 9999999/ **0** / 1] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel. Pages stored with the Store File button from within the Copy mode screen go to the C: counter.
8 692	C:TX PGS/LS	*CTL	
8 693	F:TX PGS/LS	*CTL	
8 694	P:TX PGS/LS	*CTL	
8 695	S:TX PGS/LS	*CTL	
8 696	L:TX PGS/LS	*CTL	

Note

- Print jobs done with Web Image Monitor and Desk Top Binder are added to the count.
- If several documents are merged for sending, the number of pages stored are counted for the application that stored them.
- When several documents are sent by a Fax broadcast, the F: count is done for the number of pages sent to each destination.

8 701	TX PGS/Port	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of pages sent by the physical port used to send them. For example, if a 3-page original is sent to 4 destinations via ISDN G4, the count for ISDN (G3, G4) is 12.		
8 701 1	PSTN-1		
8 701 2	PSTN-2		
8 701 3	PSTN-3		
8 701 4	ISDN (G3,G4)		
8 701 5	Network		

8 711	T:Scan PGS/Comp	*CTL	[0 to 9999999/ **0** / 1]
8 715	S:Scan PGS/Comp	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of pages sent by each compression mode.		

8 715 1	JPEG/JPEG2000	
8 715 2	TIFF(Multi/Single)	
8 715 3	PDF	
8 715 4	Other	
8 715 5	PDF/Comp	

8 721	T:Deliv PGS/WSD	*CTL	[0 to 9999999/ **0** / 1]
8 725	S: Deliv PGS/WSD	*CTL	
	These SPs count the number of pages scanned by each scanner mode.		
x 1	B/W	-	
x 2	Color	-	

8 731	T:Scan PGS/Media	*CTL	[0 to 9999999/ **0** / 1]
8 735	S:Scan PGS/Media	*CTL	
	These SPs count the number of pages scanned and saved in a meia by each scanner mode.		
x 1	B/W	-	
x 2	Color	-	

8 741	RX PGS/Port	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of pages received by the physical port used to receive them.		
8 741 1	PSTN-1	-	
8 741 2	PSTN-2	-	
8 741 3	PSTN-3	-	
8 741 4	ISDN (G3,G4)	-	

8 741 5	Network	-

8 771	Dev Counter	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the frequency of use (number of rotations of the development rollers) for black and other color toners.		
8 771 1	Total		

8 781	Toner_Bottle_Info.	*ENG	[0 to 9999999/ **0** / 1]
	These SPs display the number of already replaced AIOs. **NOTE:** Currently, the data in SP7-833-011 through 014 and the data in SP8-781-001 through 004 are the same.		
8 781 1	BK	The number of AIOs	

8 791	LS Memory Remain	*CTL	This SP displays the percent of space available on the document server for storing documents. [0 to 100 / **0** / 1]

8 801	Toner Remain	*CTL	[0 to 100/ **0** / 1]
	These SPs display the percent of toner remaining. This SP allows the user to check the toner supply at any time. **Note:** This precise method of measuring remaining toner supply (1% steps) is better than other machines in the market that can only measure in increments of 10 (10% steps).		
8 801 1	K		

8 851	CVr Cnt: 0-10%	*ENG	[0 to 9999999/ **0** / 1]
	These SPs display the number of scanned sheets on which the coverage is from 0% to 10%.		
8 851 11	0 to 2%: BK		
8 851 21	3 to 4%: BK		
8 851 31	5 to 7%: BK		
8 851 41	8 to 10%: BK		

8 861	CVr Cnt: 11-20%	*ENG	[0 to 9999999/ **0** / 1]
	These SPs display the number of scanned sheets on which the coverage is from 11% to 20%.		
8 861 1	BK		

8 871	CVr Cnt: 21-30%	*ENG	[0 to 9999999/ **0** / 1]
	These SPs display the number of scanned sheets on which the coverage of each color is from 21% to 30%.		
8 871 1	BK		

8 881	CVr Cnt: 31%-	*ENG	[0 to 9999999/ **0** / 1]
	These SPs display the number of scanned sheets on which the coverage is 31% or higher.		
8 881 1	BK		

8 891	Page/Toner Bottle	*ENG	[0 to 9999999/ **0** / 1]
	These SPs display the amount of the remaining current toner.		
8 891 1	BK		

8 901	Page/Toner_Prev1	*ENG	[0 to 9999999/ **0** / 1]
	These SPs display the amount of the remaining previous toner.		
8 901 1	BK		

8 911	Page/Toner_Prev2	*ENG	[0 to 9999999/ **0** / 1]
	These SPs display the amount of the remaining 2nd previous toner.		
8 911 1	BK		

8 921	Cvr Cnt/Total	*CTL	[0 to 9999999/ **0** / 1]
	Displays the total coverage and total printout number.		
8 921 1	Coverage (%) Bk		
8 921 11	Coverage /P: Bk		

8 941	Machine Status	*CTL / [0 to 9999999/ **0** / 1]
	These SPs count the amount of time the machine spends in each operation mode. These SPs are useful for customers who need to investigate machine operation for improvement in their compliance with ISO Standards.	
8 941 1	Operation Time	Engine operation time. Does not include time while controller is saving data to HDD (while engine is not operating).
8 941 2	Standby Time	Engine not operating. Includes time while controller saves data to HDD. Does not include time spent in Energy Save, Low Power, or Off modes.
8 941 3	Energy Save Time	Includes time while the machine is performing background printing.
8 941 4	Low Power Time	Includes time in Energy Save mode with Engine on. Includes time while machine is performing background printing.

8 941 5	Off Mode Time	Includes time while machine is performing background printing. Does not include time machine remains powered off with the power switches.
8 941 6	SC	Total time when SC errors have been staying.
8 941 7	PrtJam	Total time when paper jams have been staying during printing.
8 941 8	OrgJam	Total time when original jams have been staying during scanning.
8 941 9	Supply PM Unit End	Total time when toner end has been staying

8 951	AddBook Register	*CTL	
	These SPs count the number of events when the machine manages data registration.		
8 951 1	User Code/User ID	User code registrations.	[0 to 9999999/ **0** / 1]
8 951 2	Mail Address	Mail address registrations.	
8 951 3	Fax Destination	Fax destination registrations.	
8 951 4	Group	Group destination registrations.	
8 951 5	Transfer Request	Fax relay destination registrations for relay TX.	
8 951 6	F-Code	F-Code box registrations.	
8 951 7	Copy Program	Copy application registrations with the Program (job settings) feature.	[0 to 255 / **0** / 255]
8 951 8	Fax Program	Fax application registrations with the Program (job settings) feature.	

8 951 9	Printer Program	Printer application registrations with the Program (job settings) feature.	
8 951 10	Scanner Program	Scanner application registrations with the Program (job settings) feature.	

8 999	Admin. Counter List	*CTL	[0 to 9999999/ **0** / 1]
	Displays the total coverage and total printout number for each color.		
8 999 1	Total		
8 999 3	Copy: BW		
8 999 7	Printer BW		
8 999 10	Fax Print: BW		
8 999 13	Duplex		
8 999 15	Coverage: BW (%)		
8 999 17	Coverage: BW Print Page (%)		
8 999 101	Transmission Total: Color		
8 999 102	Transmission Total: BW		
8 999 103	FAX Transmission		
8 999 104	Scanner Transmission: Color		
8 999 105	Scanner Transmission: BW		

5.10 INPUT AND OUTPUT CHECK

5.10.1 INPUT CHECK TABLE

When entering the Input Check mode, 8 digits display the result for a section. Each digit corresponds to a different device as shown in the table.

Bit No.	7	6	5	4	3	2	1	0
Result	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1

Mianframe

5803	Description	Reading	
		0	1
5803 1	Cover Open (Front door or duplex unit)	Open	Closed
5803 2	Main Motor:Lock	Not lock	Lock
5803 3	Polygon Motor:Lock	Not lock	Lock
5803 4	Duplex Fan :Lock	Not lock	Lock
5803 5	Main Fan :Lock	Not lock	Lock
5803 6	PSU Fan :Lock	Not lock	Lock
5803 7	Controller Fan :Lock	Not lock	Lock
5803 8	Tray Set (Tray 1)	Not set	Set
5803 9	Fusing Temp: Error	No error	Error
5803 10	Toner End Sensor	Not end	End
5803 11	Paper Overflow Sensor		
5803 12	Regist Sensor	Paper not detected	Paper detected

5803	Description	Reading	
		0	1
5803 13	Paper Exit Entrance SN (Fusing Exit Sensor)	Paper not detected	Paper detected
5803 14	Duplex Entrance SN	Paper not detected	Paper detected
5803 15	Duplec Relay SN	Paper not detected	Paper detected
5803 16	Duplec Inverter SN	Paper not detected	Paper detected
5803 17	Paper End Sensor	Not end	End
5803 18	Paper Height Sensor	See "Table 3" deccribed below.	
5803 19	Paper Size Sensor	See "Table 1" deccribed below.	
5803 20	Bypass Paper End	Not end	End
5803 21	AIO FAN:Lock	Not lock	Lock
5803 22	Fusing Thermistor 2	Not used	
5803 23	Transfer Thermistor	Displays current ambient temperature.	
5803 24	Fusing Thermistor	Displays current fusing temperature.	
5803 25	Fusing Unit Set	7E: Set Blank: Not set	
5803 26	HVPS: Transfer:IFB	μA	
5803 27	HVPS: Charge:VFB	V	
5803 28	HVPS: Develop:VFB	V	
5803 29	Voltage Frequency	Off	On
5803 30	PSU Fan2:Lock	Not lock	Lock
5803 31	1bin Relay Sensor	Paper not detected	Paper detected
5803 33	1bin Paper Set SN	Paper not detected	Paper detected
5803 34	1bin Paper Exit SN	Paper not detected	Paper detected
5803 35	Mecha Counter:Set	Not installed	Installed

5803	Description	Reading	
		0	1
5803 36	Key Counter:Set	Not installed	Installed
5803 37	Key Card:Set	Not installed	Installed
5803 41	PFU1:Tray Set Sensor	Not set	Set
5803 42	PFU1:Paper End Sensor	Not end	End
5803 43	PFU1:T2 Transport SN	Paper not detected	Paper detected
5803 44	PFU1:Paper Size Sensor	See "Table 2" deccribed below.	
5803 45	PFU1:T2 Paper Height SN	See "Table 3" deccribed below.	
5803 46	PFU2:Tray Set Sensor	Not set	Set
5803 47	PFU2:Paper End Sensor	Not end	End
5803 48	PFU2:T2 Transport SN	Paper not detected	Paper detected
5803 49	PFU2:Paper Size Sensor	See "Table 2" deccribed below.	
5803 50	PFU2:T2 Paper Height SN	See "Table 3" deccribed below.	
5803 51	PFU3Tray Set Sensor	Not set	Set
5803 52	PFU3:Paper End Sensor	Not end	End
5803 53	PFU3:T2 Transport SN	Paper not detected	Paper detected
5803 54	PFU3:Paper Size Sensor	See "Table 2" deccribed below.	
5803 55	PFU3:T2 Paper Height SN	See "Table 3" deccribed below.	
5803 200	Scanner HP Sensor	Not HP	HP
5803 201	Platen Cover Sensor	Open	Close

Table 1: Paper Size Sensors (Tray 1)

0: Interrupted, 1: Not interrupted

Models		Paper size sensor		
North America	**Europe/Asia**	**3 (bit2)**	**2 (bit1)**	**1 (bit0)**
A4	A4	0	1	0
LT	LT	1	0	1
Exe	Exe	0	0	1
HLT	A5	1	1	0
-	A6	1	0	0

Table 2: Paper Size Sensors (PFU 1, 2, 3)

0: Interrupted, 1: Not interrupted

Models		Paper size sensor		
North America	**Europe/Asia**	**1 (bit2)**	**2 (bit1)**	**3 (bit0)**
A4	A4	0	1	0
LT	LT	1	0	1
Exe	Exe	1	0	0
HLT	A5	0	1	1
-	A6	0	1	1

Table 2: Paper Remaining Sensors

Amount of paper	Remaining paper sensor 1	Remainng paper sensor 2
1-49 sheets (10%)	OFF	OFF
50-249 sheets (50%)	OFF	ON
250-449 sheets (90%)	ON	ON
450-550 sheets (100%)	ON	OFF

ARDF

6007	Description	Reading	
		0	1
6007 9	Original Set Sn	Paper not detected	Paper detected
6007 13	Registration Sn	Paper not detected	Paper detected
6007 15	Feed Cover	ADF cover close	ADF cover open
6007 17	Reverse Sn	Paper not detected	Paper detected

Internal Finisher

6145	Description	Reading	
		0	1
6145 1	Entrance Sensor	Paper not detected	Paper detected
6145 2	Paper Exit Sensor	Paper not detected	Paper detected
6145 3	Jogger Fence HP Sensor	Paper not detected	Paper detected
6145 4	Shift Roller HP Sensor	Paper not detected	Paper detected
6145 5	Gathering Roller Sensor	Paper not detected	Paper detected
6145 6	Exit Guide Plate Sensor	Paper not detected	Paper detected
6145 7	Staple Tray Paper Sensor	Paper not detected	Paper detected
6145 8	Shift Tray Paper Sensor	Paper not detected	Paper detected
6145 9	Shift Tray Full Sensor	Paper not detected	Paper detected
6145 10	Stapler HP Sensor	Paper not detected	Paper detected
6145 11	Staple Near End Sensor	Paper not detected	Paper detected
6145 12	Staple Self Priming Sensor	Paper not detected	Paper detected
6145 13	Front Door SW	Front door closed	Front door open

5.10.2 OUTPUT CHECK TABLE

Copier

5804	Display	Description
5801 1	All OFF	
5801 2	Main Motor:H	
5804 3	Main Motor:L	-
5804 4	Duplex Motor:H	-
5804 5	Duplex Motor:L	-
5804 6	Duplex Inverter Motor:H	-
5804 7	Duplex Inverter Motor:L	-
5804 8	Dplx Inverter Motor:Rev:H	-
5804 9	Dplx Inverter Motor:Rev:L	-
5804 10	Polygon Motor:H	-
5804 11	Polygon Motor:L	-
5804 12	PSU FAN:H	-
5804 13	Main FAN:H	-
5804 14	Relay CL	-
5804 15	Paper Feed CL	-
5804 16	Bypass Feed CL	-
5804 17	Regist CL	-
5804 18	Duplex Junction SOL	-
5804 19	LD1	LD1 unit in the laser unit
5804 20	LD2	LD2 unit in the laser unit

5804 21	LD1 and LD2	-
5804 22	New Fusing Unit Fuse	Breaks the new unit fuse of the fusing unit.
5804 23	Controller FAN:H	-
5804 24	HVPS:Charge	-
5804 25	HVPS:Develop	-
5804 26	HVPS:Transfer+ (positive)	-
5804 27	HVPS:Transfer- (negative)	-
5804 28	RFID:ON/OFF	-
5804 29	RFID:Communication	-
5804 30	PSU FAN2:H	-
5804 31	Main FAN:L	-
5804 32	Duplex FAN:H	-
5804 33	Duplex FAN:L	-
5804 34	1bin SOL	-
5804 35	Controller FAN:L	-
5804 36	Mecha Counter	-
5804 37	Mecha Counter	-
5804 38	Key Card	-
5804 39	PSU FAN:L	-
5804 40	PSU FAN2:L	-
5804 41	PFU :All OFF	-
5804 42	PFU1:Motor:H	-
5804 43	PFU1:Motor:L	-
5804 44	PFU1:Paper Feed CL	-

5804 45	PFU2:Motor:H	-
5804 46	PFU2:Motor:L	-
5804 47	PFU2:Paper Feed CL	-
5804 48	PFU3:Motor:H	-
5804 49	PFU3:Motor:L	-
5804 50	PFU3:Paper Feed CL	-
5804 51	AIO FAN:H	-
5804 52	AIO FAN:L	-
5804 53	Main Motor:Rev:H	-
5804 54	Main Motor:Rev:L	-
5804 202	Scanner Lamp	

ARDF

6008	Display	Description
6008 3	Feed Motor: Forward	-
6008 4	Feed Motor: Reverse	-
6008 5	Relay Motor: Forward	-
6008 9	Feed Clutch	-
6008 11	Junction Gate Solenoid	-

Internal Finisher

6146	Display	Description
6146 001	Carry Motor	Transport Motor
6146 002	Exit Motor	-
6146 003	Jogger Motor	-
6146 004	Sft Motor	Shift Roller Motor
6146 005	Hitroll Motor	Gathering Roller Motor
6146 006	Exit Guide Plate Motor	-
6146 007	Tray Motor	Tray Lift Motor
6146 008	Staple Motor	-
6146 009	Stopper Solenoid	Pick-up Solenoid

5.11 PRINTER SERVICE MODE

5.11.1 SP1-XXX (SERVICE MODE)

1001	Bit Switch			
001	Bit Switch 1		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	**No I/O Timeout**	0: Disable	1: Enable
		Enable: The machine I/O Timeout setting will have no effect. I/O Timeouts will never occur.		
	bit 4	**SD Card Save Mode**	0: Disable	1: Enable
		Enable: Print jobs will be saved to an SD Card in the GW SD slot.		
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	**[RPCS,PCL]: Printable area frame border**	0: Disable	1: Enable
		Prints all RPCS and PCL jobs with a border around the printable area.		

1001	Bit Switch			
002	Bit Switch 2		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	**Applying a Collate Type**	0: Shift Collate	1: Normal Collate
		A collate type (shift or normal) will be applied to all jobs that do not explicitely define a collate type. **Note:** If BitSwitch 5-0 is enabled, this BitSwitch has no effect.		
	bit 3	**[PCL5e/c,PS]: PDL Auto Switching**	0: Enable	1: Disable
		Disable: The machine ability to change the PDL processor mid-job. Some host systems submit jobs that contain both PS and PCL5e/c. If Auto PDL switching is disabled, these jobs will not be printed properly.		
	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	**Bit Switch**			
003	Bit Switch 3		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	**[PCL5e/c]: Legacy HP compatibility**	0: Disable	1: Enable
		Enable: Uses the same left margin as older HP models such as HP4000/HP8000. In other words, the left margin defined in the job (usually "<ESC>*r0A") will be changed to "<ESC>*r1A"		
	bit 3	DFU	-	-
	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	**Bit Switch**			
004	Bit Switch 4 **DFU**		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	**IPDS print-side reversal**	0: Disable	1: Enable
		If enabled, the simplex pages of IPDS jobs will be printed on the front side because of printing on the back side of the page. This might reduce printing speed.		
	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	Bit Switch			
005	Bit Switch 5		0	1
	bit 0	**Show "Collate Type", "Staple Type" and "Punch Type" buttons on the operation panel.**	0: Disable	1: Enable
		If enabled, users will be able to configure a Collate Type, Staple Type, and Punch Type from the operation panel. The available Types will depend on the device and configured options. After enabling this BitSw, the settings will appear under: "User Tools > Printer Features > System"		
	bit 1	**Multiple copies if a paper size or type mismatch occurs**	0: Disable (Single copy)	1: Enable (Multiple copy)
		If a paper size or type mismatch occurs during the printing of multiple copies, only a single copy is output by default. Using this BitSw, the device can be configured to print all copies even if a paper mismatch occurs.		
	bit 2	**Prevent SDK applications from altering the contents of a job.**	0: Disable	1: Enable
		If this BitSw is enabled, SDK applications will not be able to alter print data. This is achieved by preventing SDK applications from accessing a module called the "GPS Filter". **Note:** The main purpose of this BitSw is for troubleshooting the effects of SDK applications on data.		
	bit 3	**[PS] PS Criteria**	0: Pattern3	1: Pattern1
		Change the number of PS criterion used by the PS interpreter to determine whether a job is PS data or not. Pattern3: includes most PS commands. Pattern1: A small number of PS tags and headers		
	bit 4	**Increase max number of the stored jobs to 1000 jobs.**	0: Disable (100)	1: Enable (1000)

		Enable: Changes the maximum number of jobs that can be stored on the HDD via Job Type settings to 1000. The default is 100.		
	bit 5	DFU	-	-
	bit 6	**Method for determining the image rotation for the edge to bind on.**	0: Disable	1: Enable
		If enabled, the image rotation will be performed as they were in the specifications of older models for the binding of pages of mixed orientation jobs. The old models are below: - PCL: Pre-04A models - PS/PDF/RPCS:Pre-05S models		
	bit 7	**Letterhead mode printing**	0: Disable	1: Enable (Duplex)
		Routes all pages through the duplex unit. If this is disabled, simplex pages or the last page of an odd-paged duplex job are not routed through the duplex unit. This could result in problems with letterhead/pre-printed pages. Only affects pages specified as Letterhead paper.		

1001	**Bit Switch**		
006	Bit Switch 6 **DFU**	-	-

1001	**Bit Switch**			
007	Bit Switch 7		0	1
	bit 0	**Print path**	0: Disable	1: Enable
		If enabled, simplex pages (in mixed simplex/duplex PS/PCL5 jobs only) and the last page of an odd paged duplex job (PS, PCL5, PCL6) are always routed through the duplex unit. Not having to switch paper paths increases the print speed slightly.		
	bit 1 to 7	DFU	-	-

1001	**Bit Switch**			
008	Bit Switch 8		0	1
	bit 0 to 2	DFU	-	-
	bit 3	**[PCL,PS]: Allow BW jobs to print without requiring User Code**	0: Disable	1: Enable (allow BW jobs to print without a user code)
		BW jobs submitted without a user code will be printed even if user code authentication is enabled. **Note:** Color jobs will not be printed without a valid user code.		
	bit 4 to 7	DFU	-	-

1001	Bit Switch			
009	Bit Switch 9		0	1
	bit 0	**PDL Auto Detection timeout of jobs submitted via USB or Parallel Port (IEEE 1284).**	0: Disable (Immediately)	1: Enable (10 seconds)
		To be used if PDL auto-detection fails. A failure of PDL auto-detection does not necessarily mean that the job cannot be printed. This bit switch tells the device whether to time-out immediately (default) upon failure or to wait 10 seconds.		
	bit 1	DFU	-	-
	bit 2	**Job Cancel**	Disabled (Not cancelled)	Enabled (Cancelled)
		If this bit switch, all jobs will be cancelled after a jam occurs. **Note:** If this bit SW is enabled, printing under the following conditions might result in problems: ▪ Job submission via USB or Parallel Port ▪ Spool printing (WIM >Configuration > Device Settings > System)		
	bit 3 to 7	DFU	-	-

1003	[Clear Setting]	
1003 001	Initialize System	Initializes settings in the System menu of the user mode.
1003 003	Delete Program	DFU

1004	[Print Summary]	
1004 001	Service Summary	Prints the service summary sheet (a summary of all the controller settings).

1005	[Display Version]	
1005 001	Printer Version	Displays the version of the controller firmware.

1006	[Sample/ Locked Print]
1006 001	Enables and disables the document server. When you select "0," the document server is enabled or disabled in accordance with Copy Service Mode SP5-967. When you select "1," the document server is enabled regardless of Copy Service Mode SP5-967.

1100	[Media Print Device Setting]	
1101 001	0: Disable 1: Enable	Selects the setting for the media print device.

5.12 SCANNER SERVICE MODE

5.12.1 SP1-XXX (SYSTEM AND OTHERS)

1001	**[Scan NV Version]**		
	Displays the scanner firmware version stored in NVRAM.		
1001 5	-	*CTL	-

1004	**[Compression Type]**		
	Selects the compression type for binary picture processing.		
1004 1	Compression Type	*CTL	[1 to 3 / **1** / 1/step] 1: MH, 2: MR, 3: MMR

1005	**[Erase margin]**		
	Creates an erase margin for all edges of the scanned image. If the machine has scanned the edge of the original, create a margin. This SP is activated only when the machine uses TWAIN scanning.		
1005 1	Range from 0 to 5 mm	*CTL	[0 to 5 / **0** / 1 mm/step]

1009	**[Remote scan disable]**	*CTL	[0 or 1 / **0** / -] 0: enable, 1: disable
1009 1	Enable or disable remote scan.		

1010	**[Non Display Clear Light PDF]**	*CTL	[0 or 1 / **0** / -] 0: Display, 1: No display
1010 1	Enable or disable remote scan.		

1011	**[Org Count Display]**	*CTL	[0 or 1 / **0** / -] 0: No display, 1: Display
1011 1	This SP codes switches the original count display on/off.		

1012	**[User Info Release]**	*CTL	[0 or 1 / **1** / -] 0: Do not release, 1: Release
1012 1	This SP code sets the machine to release or not release the following items at job end. ▪ Destination (E-mail/Folder/CS) ▪ Sender name ▪ Mail Text ▪ Subject line ▪ File name		

1013	**[Scan to Media Setting]**	*CTL	[0 or 1 / **1** / -] 0: Disable, 1: Enable
1013 1	This SP code enables/disables the multi-media function option (USB 2.0/SD Slot) mounted on the left rear corner of the machine. Operators can scan documents to either an SD card or a USB memory device inserted into this unit. This SP must be enabled (set to "1") in order for the device to function.		

5.12.2 SP2-XXX (SCANNING-IMAGE QUALITY)

2021	**[Compression Level (Gray-scale)]**		
	Selects the compression ratio for grayscale processing mode (JPEG) for the three settings that can be selected at the operation panel.		
2021 1	Comp1: 5-95	*CTL	[5 to 95 / **20** / 1 /step]
2021 2	Comp2: 5-95		[5 to 95 / **40** / 1 /step]
2021 3	Comp3: 5-95		[5 to 95 / **65** / 1 /step]
2021 4	Comp4: 5-95		[5 to 95 / **80** / 1 /step]
2021 5	Comp5: 5-95		[5 to 95 / **95** / 1 /step]

2024	**[Compression ratio of ClearLight PDF]**		
	Selects the compression ratio for clearlight PDF for the two settings that can be selected at the operation panel.		
2024 1	Compression Ratio (Normal)	*CTL	[5 to 95 / **25** / 1 /step]
2024 2	Compression Ratio (High)		[5 to 95 / **20** / 1 /step]

2025	**[Compression ratio of ClearLight PDF JPEG2000]**		
	Selects the compression ratio for clearlight PDF JPEG2000 for the two settings that can be selected at the operation panel.		
2025 1	Compression Ratio (Normal)	*CTL	[5 to 95 / **25** / 1 /step]
2025 2	Compression Ratio (High)		[5 to 95 / **20** / 1 /step]

5.13 FAX SERVICE MODE

See the "Filed Service Manual" of Fax Option Type SP5200 about following information;

- Service Tables
- Bit Switches
- NCU Parameters
- Dedicated Transmission Parameters
- Service RAM Addresses

5.14 FIRMWARE UPDATE

To update the firmware for this machine, you must have the new version of the firmware downloaded onto an SD (Secure Digital) Card. The SD Card is inserted into SD slot 2 on the rear side of the controller box.

5.14.1 TYPE OF FIRMWARE

There are several types of firmware as shown below.

Type of firmware	Function	Location of firmware	Message shown
Engine	Printer engine control	BICU Flash ROM	Engine
System/Copy Application	Operating system	Flash ROM on the controller board	System/Copy
ADF	ADF control	ADF Main Control Board	ADF
Finisher	Finisher control	Finisher	Finisher1
NIB/DESS	Network Interface/ Security control	Flash ROM on the controller board	NetworkSupport
Security & Encryption	HDD encryption/ Data Overwrite	Standard Security & Encryption unit SD card	HDD Format Option
Language (16 languages)	Language firmware Two languages can be selected from 16 languages.	Operation Panel	Language1/ Language2
RPCS	Page description language (RPCS for XPS driver data process)	Flash ROM on the controller board	RPCS

PS3/ PDF Adobe	Page description language (PostScript3)	Flash ROM on the controller board	PS/ PDF
PCL	Page description language (PCL)	Flash ROM on the controller board	PCL/ PCLXL
Summary Font	Summary fonts	Flash ROM on the controller board	FONT
PCL Font	PCL fonts	Flash ROM on the controller board	FONT1
PS Font	PostScript3 fonts	Flash ROM on the controller board	FONT2
Netfile Application	Feature application	Flash ROM on the controller board	NetworkDocBox
Fax Application	Feature application	Flash ROM on the controller board	Fax
Printer Application	Feature application	Flash ROM on the controller board	Printer
Scanner Application	Feature application	Flash ROM on the controller board	Scanner
Remote Fax	Fax control	Flash ROM on the controller board	RFax
WebSys	Web Service application	Flash ROM on the controller board	Web Support
WebDocBox	Document server application	Flash ROM on the controller board	Web Uapl
Java VM	Java VM platform	Standard Java VM SD card	SDK1

5.14.2 BEFORE YOU BEGIN

An SD card is a precision device. Always observe the following precautions when you handle SD cards:

- Always switch the machine off before you insert an SD card. Never insert the SD card into the slot with the power on.
- Do not remove the SD card from the service slot after the power has been switched on.
- Never switch the machine off while the firmware is downloading from the SD card.
- Keep SD cards in a safe location where they are not exposed to high temperature, high humidity, or exposure to direct sunlight.
- Always handle SD cards with care. Do not bend or scratch them. Do not let the SD card get exposed to shock or vibration.
- Make sure that the write protection of an SD card is unlocked when you download an application to it. If not, downloading fails and a download error (e.g. Error Code 44) occurs during a firmware upgrade.

Keep the following points in mind when you use the firmware update software:

- "Upload" means to send data from the machine to the SD card. "Download" means to send data from the SD card to the machine.
- To select an item on the LCD, touch the appropriate button on the soft touch-screen of the LCD, or, press the appropriate number key on the 10-key pad of the operation panel. For example, when "Exit (0)" shows on the screen you can touch the Exit button on the screen, or, press the "0" button on the operation panel of the copier.
- Make sure that the machine is disconnected from the network to prevent a print job for arriving while the firmware update is in progress before you start the firmware update procedure.

5.14.3 UPDATING FIRMWARE

Preparation

- If the SD card is blank, copy the entire "romdata" folder onto the SD card.
- If the card already contains the "romdata" folder, copy the "M052" folder onto the card.

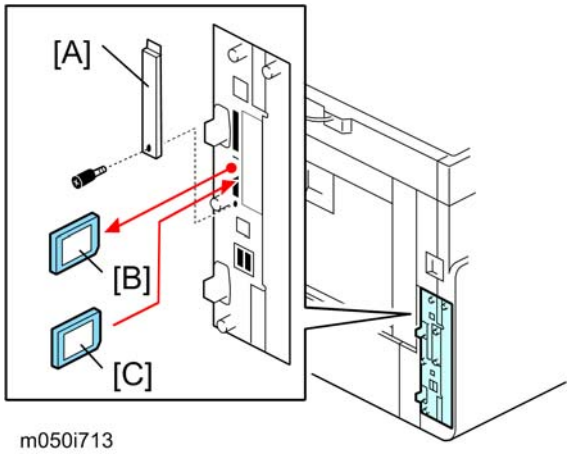
If the card already contains folders up to "M052"", copy the necessary firmware files (e.g. M052xxxx.fwu) into this folder.

Note

- Do not put multiple machine firmware programs on the same SD card. Copy the only model firmware you want.

Updating Procedure

1. Turn the main power switch off.



2. Remove the SD slot cover [A] (x 1).
3. Remove the VM card [B] from SD slot 2 (lower slot).
4. Insert the SD card [C] into SD slot 2. Make sure the label on the SD card faces the left side of the machine.
5. Slowly push the SD card into the slot so it locks in place. You will hear it click. Make sure the SD card locks in place.

   Note

   - To remove the SD, push it in to unlock the spring lock. Then release it so it pops out of the slot.
6. Disconnect the network cable from the copier if the machine is connected to a network.
7. Switch the main power switch on. After about 45 seconds, the initial version update screen appears on the LCD in English.
8. On the screen, touch the button or press the corresponding number key on the operation panel to select the item in the menu that you want to update.

ROM/NEW	What it means
ROM:	Tells you the number of the module and name of the version currently installed. The first line is the module number, the second line the version name.
NEW:	Tells you the number of the module and name version on the SD card. The first line is the module number, the second line the version name.

Note

- Controller, engine and operation panel firmware cannot be updated at the same time. It is recommended to update firmware modules one by one.

9. Touch "UpDate (#)" (or) to start the update.

Note

- The progress bar does not show for the operation panel firmware after you touch "OpPanel". The power on key flashes on and off at 0.5 s intervals when the LCDC firmware is updating. The power key flashes on and off at 3 s intervals when the update is finished.

10. The "Update is Done" message appears on the operation panel after completing the updating. The message differs depending on the firmware that has been updated.
11. Switch the copier main power switch off when you see the "Update is Done" message or follow the procedure that is displayed on the operation panel.
12. Press in the SD card to release it. Then remove it from the slot.
13. Reinstall the VM card from SD slot 2 (lower slot).
14. Attach the SD slot cover (x 1).
15. Switch the copier on for normal operation.

Error Messages

An error message shows in the first line if an error occurs during the download.
The error code consists of the letter "E" and a number. The example above shows error "E24" displayed. For details, refer to the Error Message Table (see "Handling Firmware Update Error").

Firmware Update Error

If a firmware update error occurs, this means the update was cancelled during the update because the module selected for update was not on the SD card.

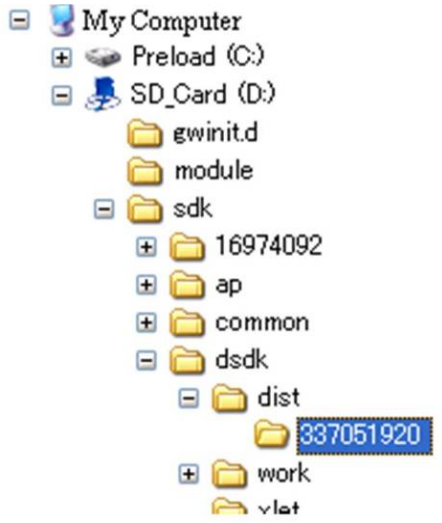
Recovery after Power Loss

If the ROM update is interrupted as a result of accidental loss of power while the firmware is updating, then the correct operation of the machine cannot be guaranteed after the machine is switched on again. If the ROM update does not complete successfully for any reason, then in order to ensure the correct operation of the machine, the ROM update error will continue to show until the ROM is updated successfully.
In this case, insert the card again and switch on the machine to continue the firmware download automatically from the card without the menu display.

5.14.4 UPDATE PROCEDURE FOR APP2ME PROVIDER

Follow this procedure to update App 2 Me if a new version is available.

1. Push the [User/Tools] key on the operation panel.
2. If an administrator setting is registered for the machine, Step 3 and Step 4 are required. Otherwise, skip to step 5.
3. Push [Login/Logout] on the operation panel.
4. Login with the administrator user name and password.
5. Touch "Extended Feature Settings" twice on the LCD.
6. Touch each of the applications until the status changes to "Stop".
7. Turn the machine off, and then remove the VM Card.



d377i501

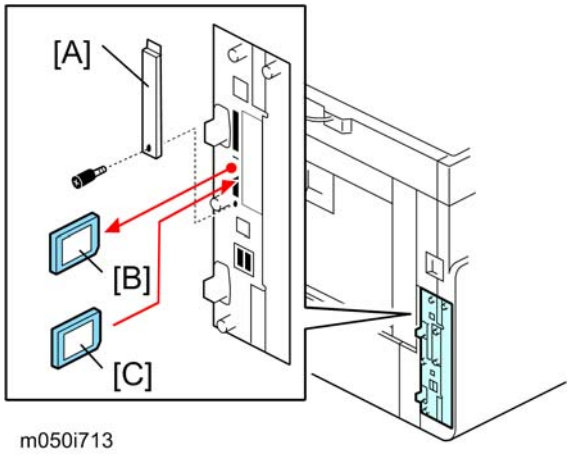
8. Prepare the newer App2Me Provider zip file from the Firmware Download Center, and then unzip the zip file (The folder name is "337051920").
9. Copy the App2Me Provider folder into the specified path for the VM card. The path is: "SD_Card Drive¥ sdk¥dsdk¥dist¥337051920"
10. Remove the SD slot cover for SD cards (x 1).
11. Turn the SD card label face to the left of the machine, and then push it slowly into SD slot 2 (lower slot) until you hear a click.
12. Attach the SD slot cover (x 1).
13. Turn the main power switch on.
14. Press [User Tools] on the operation panel.
15. Touch the "Extended Feature Settings" button twice.
16. Touch the "Extended Feature Info" tab on the LCD.
17. Touch the "App2Me" line.
18. Set the setting of the "Auto Start" to "On".
19. Touch the "Exit" button.

20. Exit the [User Tools/Counter] settings.

Important

- App2Me and all other running applications on the VM card must be shut down before removing the VM card in order to update the firmware, back up NVRAM, install the browser unit, or execute application move or undo with SP5873.
- After the VM card is re-inserted, App2Me (and any other VM card applications used by the customer) must be switched on after the machine is switched on.

5.14.5 BROWSER UNIT UPDATE PROCEDURE



1. Remove the SD slot cover [A] for SD cards (x 1).
2. Remove the VM card from SD slot 2 [B] (lower slot).
3. Turn the SD-card [C] label face of the browser unit to the left of the machine. Then push it slowly into SD slot 2 (lower slot) until you hear a click.
4. Plug in and turn on the main power switch.
5. Push the "User Tools" key.
   - If an administrator setting is registered for the machine, step 5 and 6 are required. Otherwise, skip to the step 7.
6. Push the "Login/ Logout" key.
7. Login with the administrator user name and password.
8. Touch "Extended Feature Settings" twice on the LCD.
9. Touch "Uninstall" on the LCD.
10. Touch the "Browser" line.
11. Confirmation message appears on the LCD.
12. Touch "Yes" to proceed.
13. Reconfirmation message appears on the LCD.
14. Touch "Yes" to uninstall the browser unit.
15. You will see "Uninstalling the extended feature... Please wait.", and then "Completed".
16. Touch "Exit" to go back to the setting screen.

17. Exit "User/Tools" setting, and then turn off the main power switch.
18. Remove the SD card of the browser unit from SD slot 2 (lower slot).
19. Overwrite the updated program in the "sdk" folder of the browser unit application with PC.
20. Do the "Installation Procedure" to install the browser unit.

5.14.6 HANDLING FIRMWARE UPDATE ERRORS

An error message shows in the first line if an error occurs during a download. The error code consists of the letter "E" and a number ("E20", for example).

Error Message Table

Code	Meaning	Solution
20	Cannot map logical address	Make sure the SD card is inserted correctly.
21	Cannot access memory	HDD connection incorrect or replace hard disks.
22	Cannot decompress compressed data	Incorrect ROM data on the SD card, or data is corrupted.
23	Error occurred when ROM update program started	Controller program abnormal. If the second attempt fails, replace controller board.
24	SD card access error	Make sure SD card inserted correctly, or use another SD card.
30	No HDD available for stamp data download	HDD connection incorrect or replace hard disks.
31	Data incorrect for continuous download	Insert the SD card with the remaining data required for the download, the re-start the procedure.
32	Data incorrect after download interrupted	Execute the recovery procedure for the intended module download, then repeat the installation procedure.
33	Incorrect SD card version	Incorrect ROM data on the SD card, or data is corrupted.

34	Module mismatch - Correct module is not on the SD card)	SD update data is incorrect. Acquire the correct data (Japan, Overseas, OEM, etc.) then install again.
35	Module mismatch - Module on SD card is not for this machine	SD update data is incorrect. The data on the SD card is for another machine. Acquire correct update data then install again.
36	Cannot write module - Cause other than E34, E35	SD update data is incorrect. The data on the SD card is for another machine. Acquire correct update data then install again.
40	Engine module download failed	Replace the update data for the module on the SD card and try again, or replace the BICU board.
42	Operation panel module download failed	Replace the update data for the module on the SD card and try again, or replace the LCDC.
43	Stamp data module download failed	Replace the update data for the module on the SD card and try again, or replace the hard disks.
44	Controller module download failed	Replace the update data for the module on the SD card and tray again, or replace controller board.
50	Electronic confirmation check failed	SD update data is incorrect. The data on the SD card is for another machine. Acquire correct update data then install again.

5.15 SD CARD APPLI MOVE

5.15.1 OVERVIEW

The service program “SD Card Appli Move” (SP5-873) lets you to copy application programs from one SD card to another SD card.

Slot 1 and Slot 2 are used to store application programs. However, more than two optional applications are supplied for this machine. In that case, you can move application programs from Slot 2 to Slot 1 with the following procedure.

Consider the following limitations when you try to merge SD cards.

- The destination SD card should have the largest memory size of all the application SD cards. Refer to the following table for the memory size of each SD card.

Outline of SD Card Appli Move:

1. Choose a SD card with enough space.

   Note

   - Do not use an SD card if it has been used on a computer. Normal operation is not guaranteed when such an SD card is used.
2. Enter SP5873 “SD Card Appli Move”. Then move the application from the SD Card in SD slot 2 (lower slot) to the card in SD slot 1 (upper slot).
3. Exit the SP mode

   Use caution when you do the SD Card Appli Move procedure:

   Note

   - The data necessary for authentication is transferred with the application program from an SD card to another SD card. Authentication fails if you try to use the SD card after you copy the application program from one card to another card.
4. Remove the SD slot cover (x 1).
5. Keep the SD card in a safe place after you have copied the application program from one card to another card. This is done for the following reasons:
   - 1) The SD card can be the only proof that the user is licensed to use the application program.
   - 2) You may need to check the SD card and its data to solve a problem in the future.

5.15.2 MOVE EXEC

The menu “Move Exec” (SP5-873-001) lets you copy application programs from the original SD card to another SD card.

Important

- Do not turn ON the write protect switch of an application SD card on the machine. If the write protect switch is ON, a download error (e.g. Error Code 44) occurs during a firmware upgrade or application merge.

1. Turn the main switch off.
2. Make sure that an SD card is in SD slot 1 (upper slot). The application program is copied into this SD card.
3. Insert the SD card (having stored the application program) to SD slot 2 (lower slot). The application program is copied from this SD card.
4. Turn the main switch on.
5. Start the SP mode.
6. Select SP5-873-001 “Move Exec.”
7. Follow the messages shown on the operation panel.
8. Turn the main switch off.
9. Remove the SD card from SD slot 2 (lower slot).
10. Turn the main switch on.
11. Check that the application programs run normally.

5.15.3 UNDO EXEC

The menu “Undo Exec” (SP5-873-002) lets you copy back application programs from an SD card to the original SD card. You can use this program when, for example, you have mistakenly copied some programs by using Move Exec (SP5-873-001).

Important

- Do not turn ON the write protect switch of an application SD card on the machine. If the write protect switch is ON, a download error (e.g. Error Code 44) occurs during a firmware upgrade or application merge.

1. Turn the main switch off.
2. Insert the original SD card in SD slot 2 (lower slot). The application program is copied back into this card.
3. Insert the SD card (having stored the application program) to SD slot 1 (upper slot). The application program is copied back from this SD card.
4. Turn the main switch on.
5. Start the SP mode.
6. Select SP5-873-002 “Undo Exec.”
7. Follow the messages shown on the operation panel.
8. Turn the main switch off.
9. Remove the SD card from SD slot 2 (lower slot).

   Note

   - This step assumes that the application programs in the SD card are used by the machine.
10. Turn the main switch on.
11. Check that the application programs run normally.

5.16 NVRAM DATA UPLOAD/DOWNLOAD

5.16.1 UPLOADING CONTENT OF NVRAM TO AN SD CARD

Do the following procedure to upload SP code settings from NVRAM to an SD card.

Note

- This data should always be uploaded to an SD card before the NVRAM is replaced.
- Make sure that the write protection of an SD card is unlocked

1. Do SP5990-001 (SMC Print) before you switch the machine off. You will need a record of the NVRAM settings if the upload fails.
2. Switch the copier main power switch off.
3. Remove the SD slot cover (x 1).
4. Insert the SD card into SD slot 2. Then switch the copier on.
5. Execute SP5824-001 (NVRAM Data Upload) and then press the “Execute” key.
6. The following files are coped to an NVRAM folder on the SD card when the upload procedure is finished. The file is saved to the path and the following filename:
   NVRAM¥<serial number>.NV
   Here is an example with Serial Number “K5000017114”:
   NVRAM¥K5000017114.NV
7. In order to prevent an error during the download, be sure to mark the SD card that holds the uploaded data with the number of the machine from which the data was uploaded.

   Note

   - You can upload NVRAM data from more than one machine to the same SD card.

5.16.2 DOWNLOADING AN SD CARD TO NVRAM

Do the following procedure to download SP data from an SD card to the NVRAM in the machine.

- The NVRAM data down load may fail if the SD card with the NVRAM data is damaged, or if the connection between the controller and BICU is defective.
- Do the download procedure again if the download fails.
- Do the following procedure if the second attempt fails:
- Enter the NVRAM data manually using the SMC print you created before uploading the NVRAM data.

1. Switch the copier main power switch off.
2. Remove the SD slot cover (x 1).
3. Insert the SD card with the NVRAM data into SD slot 2.
4. Switch the copier main power switch on.
5. Do SP5825-001 (NVRAM Data Download) and press the “Execute” key.

Note

- The serial number of the file on the SD card must match the serial number of the machine for the NVRAM data to download successfully. The download fails if the serial numbers do not match.

This procedure does not download the following data to the NVRAM:

- Total Count
- C/O, P/O Count

5.17 CARD SAVE FUNCTION

5.17.1 OVERVIEW

Card Save:

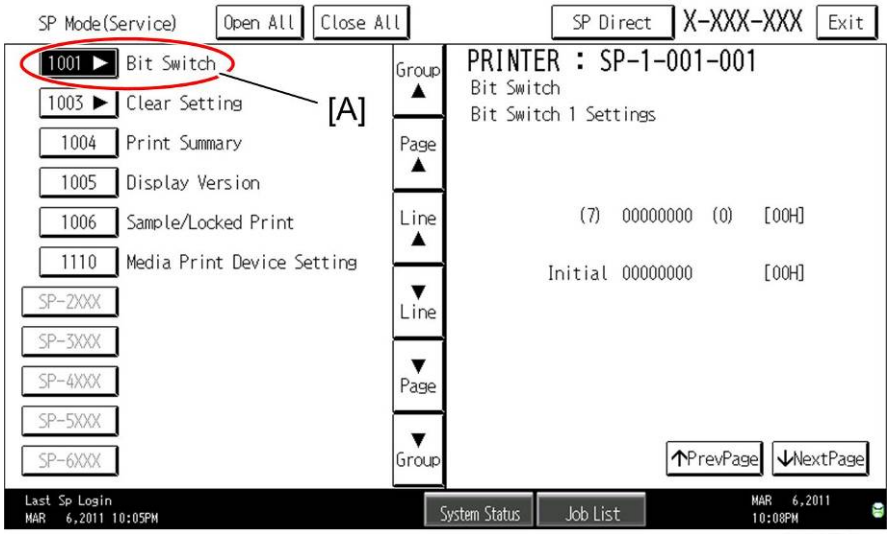
- The Card Save function is used to save print jobs received by the printer on an SD card with no print output. Card Save mode is toggled using printer Bit Switch #1 bit number 4. Card Save will remain enabled until the SD card becomes full, or until all file names have been used.
- Captures are stored on the SD card in the folder /prt/cardsave. File names are assigned sequentially from PRT00000.prn to PRT99999.prn. An additional file PRT.CTL will be created. This file contains a list of all files created on the card by the card save function.
- Previously stored files on the SD card can be overwritten or left intact. Card Save SD has “Add” and “New” menu items.
  - **Card Save (Add):** Appends files to the SD Card. Does not overwrite existing files. If the card becomes full or if all file names are used, an error will be displayed on the operation panel. Subsequent jobs will not be stored.
  - **Card Save (New):** Overwrites files in the card's /prt/cardsave directory.

Limitation:

- Card Save cannot be used with PJL Status Readback commands. PJL Status Readbacks will not work. In addition they will cause the Card Save to fail.

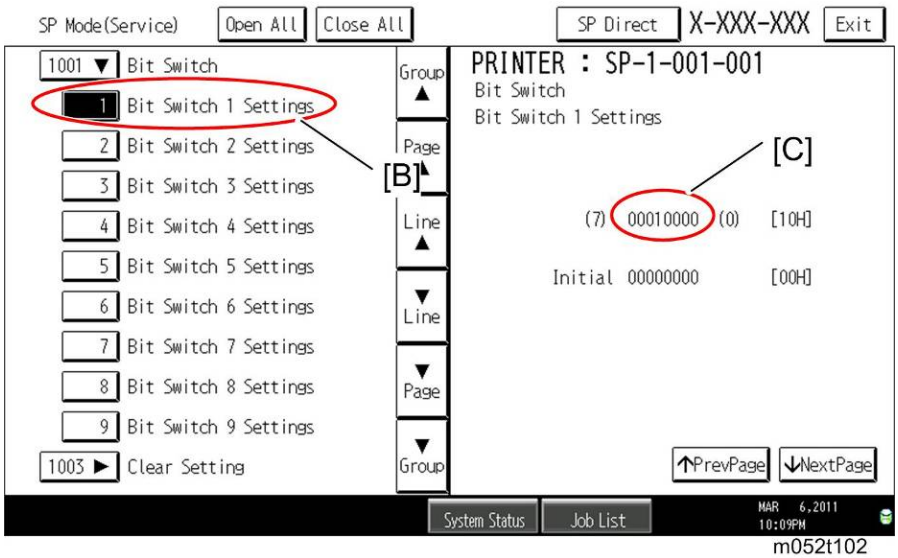
5.17.2 PROCEDURE

1. Turn the main power switch OFF.
2. Insert the SD card into slot 2. Then turn the power ON.
3. Enter SP mode.
4. Select the “Printer Sp”.



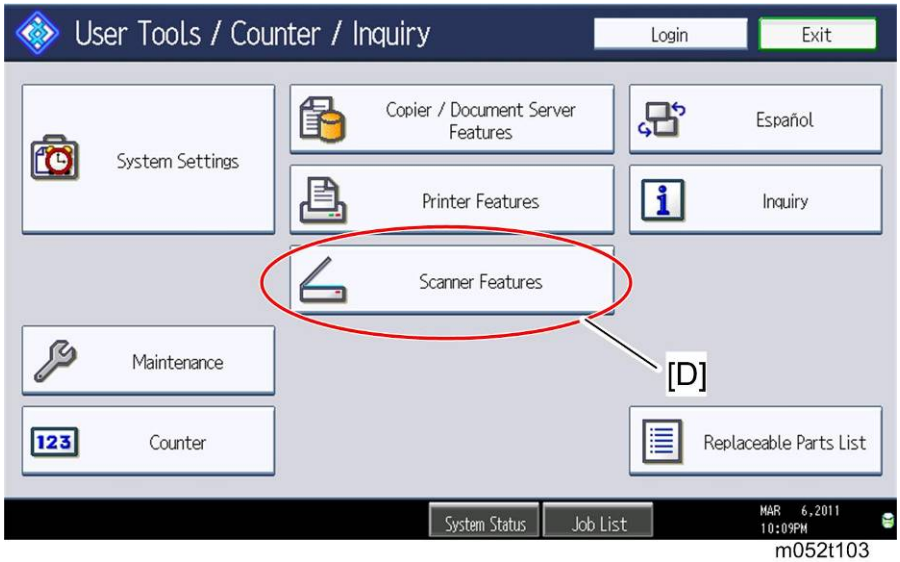
m052t101

5. Select SP-1001 "Bit Switch” [A].



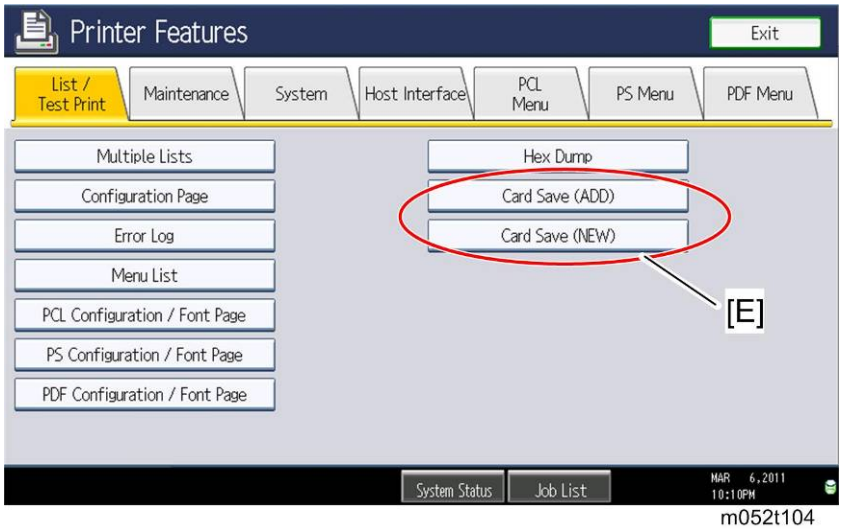
m052t102

6. Select “Bit Switch 1 Settings” [B] and use the numeric keypad to turn bit 4 ON and then press the “#” button to register the change. The result should look like: **00010000** [C]. By doing this, Card Save option will appear in the “List/Test Print” menu.
7. Press “Exit” to exit SP Mode.
8. Press the “User Tools/Counter” button.



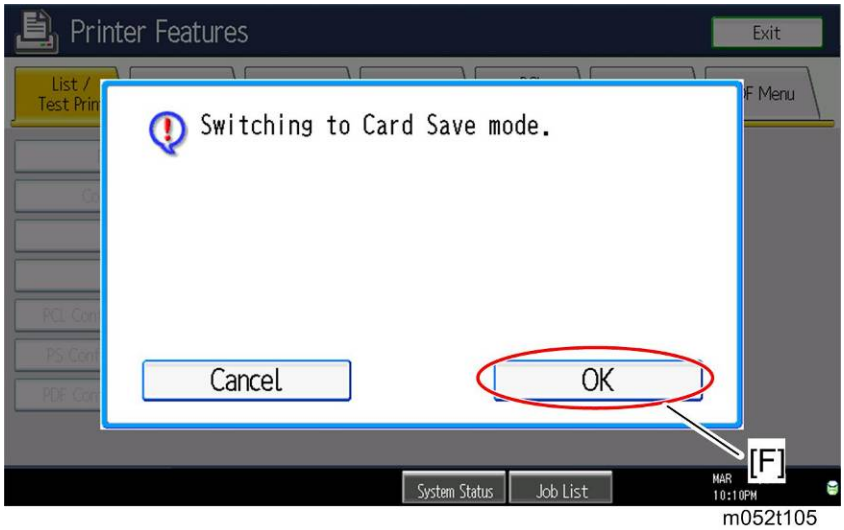
m052t103

9. Select “Printer Features” [D].



m052t104

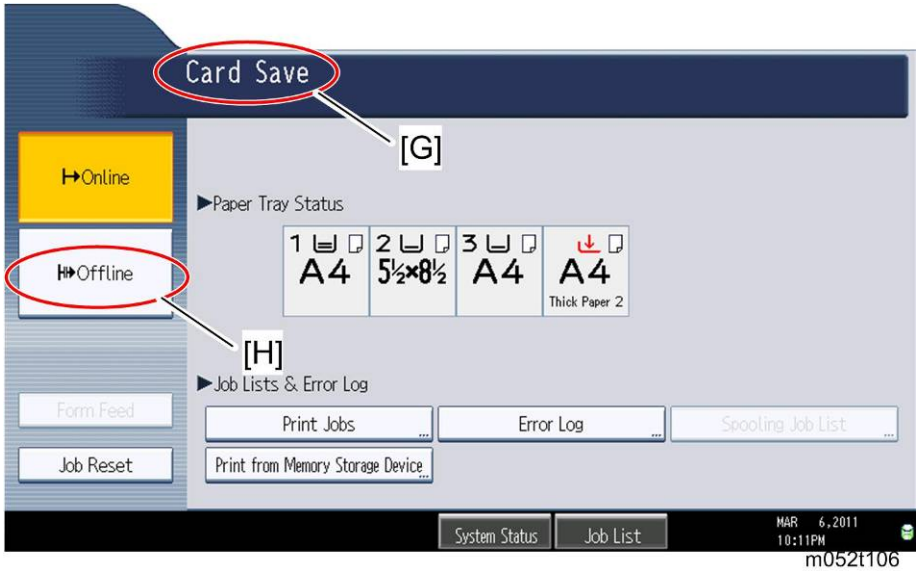
10. Card Save (Add) and Card Save (New) [E] should be displayed on the screen. Select Card Save (Add) or Card Save (New).



m052t105

11. Press “OK” and then exit the “User Tools/Counter” menu.

12. Press the “Printer” button.



13. "Card Save" [G] should be displayed in the top left of the display panel.
14. Send a job to the printer. The Communicating light should start blinking as shown below.
15. As soon as the printer receives the data, it will be stored on the SD card automatically with no print output. Nothing is displayed on the screen, indicating that a Card Save operation was successful.
16. Press “Offline” [H] and then the “Clear/Stop” button to exit Card Save mode.
17. Change the Bit Switch Settings back to the default **00000000**. Press the “#” button in the numeric keypad to register the changes.
18. Remove the SD card after the main power switch is turned off.

5.17.3 ERROR MESSAGES

Card Save error messages:

- **Init error:** A card save process (e.g. card detection, change to kernel mode) failed to initialize.
- **Card not found:** Card cannot be detected in the slot.
- **No memory:** Insufficient working memory to process the job.
- **Write error:** Failed to write to the card.
- **Other error:** An unknown error occurred.

If an error occurs, pressing “OK” will cause the device to discard the job and return to the ready state.

5.18 USING SP MODES

5.18.1 ADJUSTING REGISTRATION AND MAGNIFICATION

To adjust the registration and magnification, you need to use several service programs. The chart shows an example of the procedure to adjust the machine in the basic configuration.

1. Output a pattern (SP5-902).
2. Adjust the sub-scan registration (SP1-001).
3. Adjust the main-scan registration of each paper tray (SP1-002).
4. Output a scanned image.
5. Adjust the main-scan magnification (SP2-112).
6. Adjust the sub-scan magnification (SP2-113).
7. Adjust the main-scan registration of the scanner (SP4-011).
8. Adjust the sub-scan registration of the scanner (SP4-010).

5.18.2 TEST PATTERN PRINT (SP 5902)

Executing Test Pattern Printing

1. Specify the pattern number and press the OK key.
2. Press the copy start key. The copy mode is activated
3. Specify copy settings and press the 0 key.
4. To return to the SP mode, press the # key.

Test Patterns

Test Patterns Using BICU	
No.	**Pattern**
0	(No print)
1	Vertical Line (1dot)
2	Vertical Line (2dot)
3	Horizontal Line (1dot)
4	Horizontal Line (2dot)
5	Grid Vertical Line

Test Patterns Using BICU	
6	Grid Horizontal Line
7	Grid Pattern Small
8	Grid Pattern Large
9	Argyle Pattern Small
10	Argyle Pattern Large
11	Independent Pattern (1dot)
12	Independent Pattern (2dot)
13	Independent Pattern (4dot)
14	Trimming Area
15	Hound’s Tooth Check (Vertical)
16	Hound’s Tooth Check (Horizontal)
17	Band (Horizontal)
18	Band (Vertical)
19	Checker Flag Pattern
20	Density Pattern
21	Full Dot Pattern
22	Full White Pattern
23	Grayscale Horizontal
24	Grayscale (Horizontal Margin)
25	Grayscale Vertical
26	Grayscale (Vertical Margin)
27	Grayscale
28	Grayscale (Margin)
29	Grayscale Grid

Test Patterns Using BICU	
30	Grayscale (Grid Margin)

5.18.3 SMC PRINT (SP 5990)

SP 5990 outputs machine status lists.

1. Select SP 5990.
2. Select a menu:
   - 001 All (Data List), 002 SP (Mode Data List), 003 User Program, 004 Logging Data, 005 Diagnostic Report, 006 Non-Default, 007 NIB Summary, 008 Capture Log, 021 Copier User Program, 022 Scanner SP, 023 Scanner User Program, 24 SDK/J Summary, 25 SDK/J Application Info
3. Press the "Execute" key.
   - Specify copy settings and press the ⓪ key. The machine status lists is output.
4. To return to the SP mode, press the ⓪key.

TROUBLESHOOTING

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

6. TROUBLESHOOTING

6.1 SERVICE CALL CONDITIONS

6.1.1 SUMMARY

There are 4 levels of service call conditions.

Level	Definition	Reset Procedure
A	To prevent damage to the machine, the main machine cannot be operated until the SC has been reset by a service representative (see the note below).	Enter SP mode, go into SP5810, press [Execute], turn the main power switch off and on.
B	SCs that disable only the features that use the defective item. Although these SCs are not shown to the user under normal conditions, they are displayed on the operation panel only when the defective feature is selected.	Turn the operation switch or main switch off and on.
C	The SC history is updated. The machine can be operated as usual.	The SC will not be displayed. Only the SC history is updated.
D	Turning the main switch off then on resets SCs displayed on the operation panel. These are re-displayed if the error occurs again.	Turn the operation switch off and on.

When a Level "D" SC code occurs

When a Level D SC occurs, a screen opens on the operation panel to tell the operator:

- An error occurred
- The job in progress will be erased
- The machine will reboot automatically after approximately 30 seconds.

The operator can wait until the machine reboots automatically or touch "Reset" on the screen to reset the machine immediately and go back to the copy screen.

If the operator does not touch “Reset”

The next message tells the operator that the machine will reset automatically and that the previous job was lost and must be started again. After reading the message, the operator touches “Confirm” on the screen. The next screen shows the number and title of the SC code, and stops until the operator turns the machine off and on.

If the operator touches “Reset”

If the operator touches "Reset" to bypass the 30-second interval for the machine to reboot, the machine reboots immediately and the operation panel displays the copy screen.

Important

- Do not try to use the operation panel during an automatic reboot. If the Remote Service System is in use, the SC code is sent immediately to the Service Center

6.1.2 SC CODE DESCRIPTIONS

Important

- If a problem concerns a circuit board, disconnect and reconnect the connectors and then test the machine. Often a loose or disconnected harness is the cause of the problem. Always do this before you decide to replace the PCB.
- If a motor lock error occurs, check the mechanical load before you decide to replace the motor or sensors.
- When a Level "A" or "B" SC occurs while in an SP mode, the machine cannot display the SC number. If this occurs, check the SC number after leaving the SP mode.
- The machine reboots automatically when the machine issues a Level "D" SC code. This is done for Level "D" SC codes only.

CAUTION

- Never turn off the main power switch when the power LED is lit or flashing. To avoid damaging the hard disk or memory, press the operation switch to switch the power off, wait for the power LED to go off, and then switch the main power switch off.

Note

- The main power LED lights or flashes while the platen cover or ARDF is open, while the main machine is communicating with a fax machine or the network server, or while the machine is accessing the hard disk or memory for reading or writing data.

SC1xx: Scanning

101	D	Exposure lamp error 1
		The standard white level setting dropped below the specified range during scanning.
		▪ White plate dirty ▪ Spurious electrical noise on power supply line ▪ Exposure lamp connection loose, broken, defective ▪ Exposure lamp defective ▪ Lamp stabilizer connection, loose, broken, defective ▪ Lamp stabilizer defective ▪ High voltage power supply harness loose, broken, defective ▪ SBU defective ▪ BCU defective ▪ SIO defective

120	D	Scanner home position error 1
		The scanner HP sensor did not turn off during scanner initialization or copying.
121	D	Scanner home position error 2
		The scanner HP sensor did not turn on during scanner initialization or copying.
		▪ Scanner motor harness loose, broken, defective at scanner motor or at BCU ▪ Scanner HP sensor harness, loose, broken, defective at HP sensor or at BICU ▪ Scanner motor or motor driver board defective ▪ Scanner motor drive board defective ▪ Scanner HP sensor defective

141	D	Black level correction error
		Black level correction could not be set properly during automatic adjustment.
		▪ Harnesses at the SBU or BICU loose, broken, defective. ▪ SBU defective

142	D	White level correction error
		White level correction could not be set properly during automatic adjustment.
		▪ Harnesses at SBU or BICU loose, broken, defective ▪ Anti-condensation heater (option) in scanner unit not operating ▪ Exposure lamp harness, loose, broken, defective ▪ Exposure lamp defective ▪ Scanner drive error ▪ SBU defective

143	C	SBU auto adjust error
		The machine could not acquire the white or black peak level setting at power on.
		▪ Harnesses at SBU or BICU loose, broken, defective ▪ Anti-condensation heater (option) in scanner unit not operating ▪ Exposure lamp harness, loose, broken, defective ▪ Exposure lamp defective ▪ Scanner drive error ▪ SBU defective

144	D	SBU connection error
		Connection to the SBU could not be confirmed, possibly due to a defect in the BICU detection port.
		▪ Harness connection at BICU or SBU loose, broken, defective ▪ BICU defective ▪ SBU defective

161 -001	D	IPU Error 1
		The self-diagnostic test detected an error at the BICU at power on, or after the machine returned from energy save mode.
		▪ Harness between SBU and BICU loose or broken ▪ BICU defective ▪ SBU defective

161 -002	D	IPU Error 2
		The machine does not detect RI answer from BICU.
		▪ Harness between SBU and BICU loose or broken ▪ BICU defective ▪ SBU defective

165	B	Copy Data Security Unit error
		An error occurred when the machine attempted to recognize the Copy Data Security Unit board.
		▪ Check installation of Copy Data Security (CDS) Unit ▪ CDS unit not correct type for the machine ▪ CDS unit defective

195	D	Serial Number Mismatch
		Serial number stored in the memory does not have the correct code.
		▪ NVRAM defective ▪ BCU replaced without original NVRAM
		1. Reinstall the original NVRAM in the replaced BCU. 2. Turn off and on the main power switch of the copier if a new NVRAM is installed in the BCU.

SC2xx: Laser Exposure

202	D	Polygon motor error 1: ON timeout
		The polygon mirror motor did not reach the targeted operating speed within 10 sec. after turning on or changing speed
203	D	Polygon motor error 1: OFF timeout
		The polygon mirror motor did not leave READY status within 3 sec. after polygon motor switched off.
204	D	Polygon motor error 1: XSCRDY signal error
		The XSCRDY signal remained HIGH four times consecutively while the LD unit was firing.
		▪ Polygon motor/driver board harness loose or broken ▪ Polygon motor/driver board defective ▪ Laser unit defective ▪ BICU defective

220	D	Laser synchronization detection error 1: LD0
		The laser synchronizing detection signal for the start position of the LD was not output for 500 ms after LDB unit turned on with the polygon motor rotating normally.
		▪ Laser synchronizing detection board harness loose or broken. ▪ Laser synchronization detection board defective ▪ LDB unit defective ▪ BICU defective

221	D	Laser synchronization detection error 2: Other than LD0
		The laser synchronizing detection signal for the start position of the LD other than LD0 was not output for 500 ms after LDB unit turned on with the polygon motor rotating normally.
		▪ Laser synchronizing detection board harness loose or broken. ▪ Laser synchronization detection board defective ▪ LDB unit defective ▪ BICU defective

230	D	FGATE ON error
		The FGATE signal did not assert within the prescribed time. (The BICU generates the FGATE signal and sends it to the LD unit when the registration sensor switches on.)
231	D	FGATE OFF error
		The FGATE signal did not go off within the prescribed time. (The BICU generates the FGATE signal and sends it to the LD unit when the registration sensor switches on.)
		▪ BICU, Controller board harness loose or broken ▪ BICU defective ▪ Controller board defective

240	B	LD error
		The IPU detected a problem at the LD unit.
		▪ LD unit harness broken, defective ▪ BICU harness broken defective ▪ LD unit defective ▪ BCU defective

SC3xx: Image Processing – 1

312	D	Charge level output error
		The PWM output level was detected higher or lower than 50% for 200 ms.
		▪ HVPS (High Voltage Power Supply) board harness loose, broken. ▪ Terminal loose or broken at the charge rollers T

320	D	Development bias leak
		A development bias leak signal is detected.
		▪ Poor connection at the development bias terminal ▪ High voltage supply board defective

SC4xx: Image Processing - 2

440	D	Transfer roller leak error 1
		A transfer roller current leak signal wad detected higher or lower than 50% for 200 ms. (The current feedback signal for the transfer roller was not detected within the correct time.)
		▪ High voltage supply board set incorrectly or defective ▪ Transfer roller set incorrectly or damaged ▪ Transfer roller set incorrectly

SC5xx: Paper Feed and Fusing

500	B	Main motor lock
		The machine does not detect motor lock signal for 250 ms during motor's operating. The machine does not detect motor lock signal for 1 second at rotating the main motor.
		▪ An obstruction has blocked operation of the main motor ▪ Main motor harness loose or broken ▪ Main motor or main motor driver board defective

530	D	Exhaust fan error
531	D	Duplex exhaust fan error
532	D	PSU fan 1 error
533	D	PSU fan 2 error
534	D	AIO fan error
535	D	Controller fan error
		The motor lock signal error is detected for 2 seconds after the motor lock signal was first detected.
		▪ Disconnected or defective harness ▪ Defective each fan

541	A	Fusing thermistor open (center)
		The temperature of the hot roller remained below 0^{o}C for 7 sec at the center of the hot roller.
		▪ Fusing thermistor out of its position because of incorrect installation ▪ Fusing thermistor disconnected or defective

542	A	Fusing temperature warm-up error (center)

		The fusing temperature does not reach the standby temperature within 24 sec. at the center of the hot roller after the main switch turned on. The condition which the fusing temperature does not increase by 7°C for 2 seconds is detected five times consecutively.
		▪ Fusing thermistor defective or out of position ▪ Fusing lamp disconnected ▪ Fusing lamp defective

543	A	Fusing overheat error 1 (center)
		The fusing thermistor detected a fusing temperature over 235°C for 1 sec. at the center of the hot roller.
		▪ TRIAC short on PSU (PSU defective) ▪ BICU board defective

544	A	Fusing overheat error 2 (center)
		A fusing temperature over 250°C is detected at the center of the hot roller by the fusing temperature monitor circuit in the BCU board.
		▪ TRIAC short on PSU (PSU defective) ▪ BICU board defective ▪ Power supply voltage unstable

545	A	Heating roller fusing lamp consecutive full power 1
		When the fusing unit is not running in the ready condition, the heating roller fusing lamp keeps on full power for 12 seconds.
		▪ Broken heating roller thermostat ▪ Broken heating roller fusing lamp

547	D	Zero cross signal detection error
		Zero cross signals were not detected within the prescribed time.
		▪ PSU, BICU harness loose or broken ▪ PSU defective

557	B	Zero cross waveform signal error
		The waveform of the zero cross signal was detected out of range.
		▪ Electrical noise on the power supply line

559	A	Consecutive fusing unit paper jams
		Three consecutive paper jams occurred in the fusing unit. The paper jam counter for the fusing unit reaches 3 times. The paper jam counter clears after the paper feeds correctly. **Note**: This SC is issued only if SP1159 is set to "1".
		▪ Remove the paper jam in the fusing unit. ▪ Make sure that the paper path in the fusing unit is clear.

SC6xx: Device Communication

610	D	Mechanical counter error: K
-	-	This SC is only for NA models. The machine detects the mechanical counter error when SP5987-001 is set to "1".
		▪ Disconnected mechanical counter ▪ Defective mechanical counter ▪ Defective BICU

620	D	Communication error between BICU and ADF
		A break occurred in the connection between the BICU and ADF
		▪ ADF disconnected ▪ ADF defective ▪ BICU harness connection loose, broken ▪ BICU defective ▪ External noise

621	D	Communication timeout between BICU and finisher
		A break (LOW) signal was received from the finisher.
		▪ Finisher serial cable connection loose, broken ▪ BICU defective ▪ Finisher main board defective ▪ External noise

622	D	Paper tray unit communication error
623	D	2nd Paper tray unit communication error
624	D	3rd Paper tray unit communication error
-	-	While the BICU communicates with an optional unit, an SC code is displayed if one of following conditions occurs. ▪ The BICU receives the break signal which is generated by the peripherals only just after the main switch is turned on. ▪ When the BICU does not receive an OK signal from a peripheral after sending a command to it.
		▪ Harness disconnected or broken ▪ BICU defective ▪ External noise ▪ Main board defective in the peripherals

641	CTL D	BICU control data transfer abnormal
		A sampling of the control data sent from the BCU reveals an abnormality.
		▪ Controller board defective ▪ External noise ▪ BCU board defective
		Check the connection between the controller board and BICU. Replace the controller board. Replace the BICU.

652	B	ID2 mismatching
		ID2 for @Remote certification is mismatching between the controller board and NVRAM.
		▪ Used controller board installed ▪ Used NVRAM installed
		Install the correct controller board or new controller board. Install the correct NVRAM or new NVRAM

653	B	ID2 error
		ID2 stored in the NVRAM is incorrect.
		▪ Used NVRAM installed
		Clear the ID2 in the NVRAM, and then input a correct ID2.

669	B	EEPROM Communication Error
		The machine failed to detect a match between the read/write data for the EEPROM on the BICU after 3 attempts.
		▪ EEPROM installed incorrectly ▪ EEPROM defective. Turn the machine power off/on after replacing the EEPROM. ▪ BICU defective.

671	CTL D	Engine board mismatch error
		Engine board and controller mismatch detected.
		▪ Wrong engine board installed. ▪ Wrong controller board installed. ▪ Check the type of engine board and controller board.
		Replace the BICU. Replace the controller board.

680 -001	D	BICU serial communication error: Time out
-002	D	BICU serial communication error: Retry error
-003	D	BICU serial communication error: Download error
-004	D	BICU serial communication error: UART error
		The serial communication error occurs in the BICU.
		▪ Noise ▪ Defective BICU
		Replace the BICU.

681	D	RFID: Communication error
		Communication error occurs when the RFID board starts to communicate with the ID chip. Retry of RFID communication fails three times after the machine has detected the RFID communication error.
		▪ Defective RFID board ▪ Disconnected ASAP I/F ▪ No memory chip on the AIO ▪ Noise

683	C	RFID: Unit check error
		The machine gets RFID communication error even the AIO has not been installed in the machine.
		▪ External noise

687	D	Memory address (PER) command error
		The BICU did not receive a memory address command from the controller with the prescribed time once the paper reached the registration sensor.
		▪ Harness connection at BICU, Controller board loose or broken ▪ Defective BICU ▪ Defective Controller Board

688	D	Print request (PRREQ) command error
		The BICU did not receive a print request command from the controller with the prescribed time once the paper reached the registration sensor.
		▪ Harness connection at BICU, Controller board loose or broken ▪ Defective BICU ▪ Defective Controller Board

690	D	GAVD communication error
		GAVD error is detected after turning on the machine or recovering from the energy save mode.
		▪ Defective BICU

SC7xx: Peripherals

721	B	Front fence motor error
		The jogger fence motor in the finisher is not operating.
		▪ Jogger motor drive is obstructed (jammed paper, paper scraps, etc.) ▪ The motor harness loose or broken ▪ Jogger fence HP sensor dirty, loose, defective ▪ Jogger fence motor defective

740	B	Corner stapler motor error
		The corner stapler motor in the finisher is not operating.
		▪ Staple jam ▪ Number of sheets in stack exceeds allowed number of sheets for stapling ▪ Stapler motor obstructed ▪ Stapler motor defective

790	D	PFU installation error
		Four paper feed units or more are installed in the main machine.
		Install three paper feed units or less in the main machine.

793	D	Gathering roller error: Internal finisher
		Gathering roller HP sensor does not detect the gathering roller at initialization. Gathering roller HP sensor does not detect the gathering roller when the gathering roller returns to its home position from the paper stack position. Note ▪ Paper jam message is displayed at 1st error detection. ▪ SC is issued at 2nd error detection.
		▪ Motor overload ▪ Loose connection of the exit guide plate motor ▪ Defective exit guide plate motor ▪ Defective gathering roller HP sensor
		Check the connections to the exit guide plate motor. Replace the exit guide plate motor. Replace the gathering roller HP sensor.

794	B	Finisher exit guide plate motor error
		▪ Motor overload ▪ Loose connection of the exit guide plate motor ▪ Defective exit guide plate motor
		Check the connections to the exit guide plate motor. Replace the exit guide plate motor.

795	B	Finisher shift roller motor error
		▪ Motor overload ▪ Loose connection of the shift roller motor ▪ Defective shift roller motor
		Check the connections to the shift roller motor. Replace the shift roller motor.

796	B	Finisher tray lift motor error
		▪ Motor overload ▪ Loose connection of the tray lift motor ▪ Defective tray lift motor
		Check the connections to the tray lift motor. Replace the tray lift motor.

797	B	Stack height lever solenoid error
		Stack height lever sensor does not turn on when the stack height lever solenoid turns off. Note ▪ Paper jam message is displayed at 1st error detection. ▪ SC is issued at 2nd error detection.
		▪ Loose connection of the stack height lever solenoid ▪ Defective stack height lever solenoid ▪ Defective stack height lever sensor

SC8xx: Controller

816	CTL D	Energy saving I/O sub-system error
		The energy saving I/O sub-system detects an error.
		▪ Controller board defective
		Replace the controller board.

817	C	Boot loader error	
		The boot loader cannot read one of the following: Self-diagnostic module, kernel, or one of the files of the root file system, or the check of one of these items on the controller board failed.	▪ File or module on the controller board is corrupted. ▪ File or module on the controller board is illegal. ▪ Replace the controller board.

819	C	Fatal kernel error	
		Due to a control error, a RAM overflow occurred during system processing.	▪ Controller board defective ▪ Insufficient memory ▪ Expanded memory defective

Note: For more details about this SC code error, execute SP5990 to print an SMC report so that you can read the error code. The error code is not displayed on the operation panel.

820	D	Self-diagnostics error: CPU
		Cut-in in ASIC occurs.
		▪ Defective ASIC ▪ Defective devices in which ASIC detects cut-in. ▪ Damaged boot monitor program or self-diagnostic program
		Replace the controller board. Reinstall the boot monitor or self-diagnostic program.

833	C	Self-diagnostic error 8: Engine I/F ASIC
[0F30] [0F31]		ASIC (Mandolin) for system control could not be detected. After the PCI configuration, the device ID for the ASIC could not be checked.
		Replace the BICU.
[0F41]		ASIC (Mandolin) for system control could not be detected. After the PCI configuration, the device ID for the ASIC could not be checked.
		Replace the BICU.
[50B1]		Could not initialize or read the bus connection.
		Check for loose connections at the mother board.
		Replace the BICU.
[50B2]		Value of the SSCG register is incorrect.
		Check for loose connections at the mother board.
		Replace the BICU.

842	B	Flash ROM verification error
		Verification error of the flash ROM on the controller board occurs. Note ▪ This SC is logged at 1st error detection. ▪ SC819 is issued at 2nd error detection.
		▪ Defective flash ROM (controller board)

851	D	IEEE 1394 I/F Abnormal	
		IEEE1394 interface error.	▪ IEEE1394 interface board defective ▪ Controller board defective

Trouble-shooting

853	D	Wireless LAN board error 1	
		At startup the wireless LAN board could be accessed, but the wireless LAN board (IEEE 802.11b or Bluetooth) could not access the controller board.	▪ Wireless LAN board not installed when the machine was turned on

854	D	Wireless LAN board error 2	
		The board that holds the wireless LAN board can be accessed, but the wireless LAN board (802.11b/Bluetooth) itself cannot be accessed while the machine is operating	▪ Wireless LAN board has been removed during machine operation.

855	D	Wireless LAN board error 3	
		An error was detected for the wireless LAN board (802.11b or Bluetooth).	▪ Wireless LAN board defective ▪ Wireless board connection not tight

856	D	Wireless LAN board error	
		An error is detected for the wireless LAN board (802.11b or Bluetooth).	▪ Wireless LAN board defective ▪ PCI connector loose

857	D	USB I/F Error	
		The USB driver is unstable and generated an error. The USB I/F cannot be used. The USB driver can generate three types of errors: RX, CRC, and STALL errors. Only the STALL error can generate this SC code.	▪ USB 2.0 disconnected ▪ Controller board defective

858	A	Data encryption conversion error	
		A serious error occurred during data encryption.	
0	A	Key acquisition error	▪ Replace the controller board
1	A	HDD key setting error	▪ Turn the machine power off/on ▪ If the error reoccurs, replace the controller board
2	A	NVRAM read/write error	▪ Replace the NVRAM
30	A	NVRAM error	▪ Turn the machine power off/on ▪ If the error reoccurs, replace the controller board
31	A	Other error	▪ See SC991

859	B	HDD data encryption error	
		Encryption of data on the hard disk failed.	
8	B	HDD check error	▪ Format the HDD
6	B	Power loss during encryption	▪ Format the HDD
10	B	Data read/write error	▪ See SC863 below

860	B	HDD error 1	
		The hard disk connection is not detected because it is defective or has not been formatted	▪ Cable between HDC and HDD loose or defective ▪ HDD power connector loose or defective ▪ HDD not formatted ▪ HDD defective ▪ Replace the controller board

861	B	HDD error 2	
		The HDD did not enter the ready status within 30 sec. after power on.	▪ Cable between HDC and HDD loose or defective ▪ HDD power connector loose or defective ▪ HDD defective ▪ Replace the controller board

863	B	HDD error 3	
		Startup without HD data lead. Data stored on the hard disk is not read correctly, due to a bad sector on the HDD	▪ Format the HDD ▪ HDD defective ▪ Controller board defective

864	D	HDD error 4	▪ HDD defective
		HD data CRC error. During operation of the HD, the HD responded with a CRC error.	

865	D	HDD error 5	
		HDD responded to an error during operation for a condition other than those for SC863 or 864.	▪ HDD defective.

866	D	SD card error 1: Recognition error	
		The SD card in the slot contains illegal program data.	▪ Use only SD cards that contain the correct data.

867	D	SD card error 2: SD card removed	
		The SD card in the boot slot when the machine was turned on was removed while the machine power was on.	▪ Insert the SD card, then turn the machine off and on.

868	D	SD card error 3: SD card access	
		An error occurred while an SD card was used.	▪ SD card not inserted correctly ▪ SD card defective ▪ Controller board defective **Note**: If you want to try to reformat the SD card, use SD Formatter Ver 1.1.

870	B	Address Book Data Error	
		Address book data stored on the hard disk was detected as abnormal when it was accessed from either the operation panel or the network.	▪ Initialize the address book data (SP5-846-050). ▪ Initialize the user information (SP5-832-006). ▪ Replace the HDD.HDD defective

872	B	HDD mail RX data abnormal	
		An error was detected at power on. The data received during mail receive could be neither read nor written.	▪ HDD sector corrupted. Reformat with SP5832 007. If this does not repair the problem, replace the HDD.

873	B	HDD mail TX data error	
		An error was detected on the HDD immediately after the machine was turned on, or power was turned off while the machine used the HDD.	▪ Do SP5832-8 (Format HDD – Mail TX Data) to initialize the HDD. ▪ Replace the HDD

874	D	Delete All error 1: HDD	
		A data error was detected for the HDD/NVRAM after the Delete All option was used. **Note**: The source of this error is the Data Overwrite Security Unit D362 running from an SD card.	▪ Turn the main switch off/on, and try the operation again. ▪ Install the Data Overwrite Security Unit again. ▪ HDD defective

875	D	Delete All error 2: Data area	
		An error occurred while the machine deleted data from the HDD. **Note**: The source of this error is the Data Overwrite Security Unit D362 running from an SD card.	▪ Turn the main switch off/on, and try the operation again.

876	D	Log data abnormal	
		An error was detected in the handling of the log data at power on or during machine operation. This can be caused if you turn the machine off while it is operating.	▪ Software error. Update the firmware ▪ NVRAM defective ▪ HDD defective

877	D	Data Overwrite Security SD card error	
		The 'all delete' function did not execute but the Data Overwrite Security Unit (D362) is installed and activated.	▪ Replace the NVRAM ▪ Reinstall the DOS from the SD card ▪ SD card defective

878	D	TPM electronic recognition error	
		The main machine firmware failed to recognize TPM because USB flash is not operating or a system module was updated incorrectly.	▪ Replace the controller board

881	D	Authentication area error
		Authentication application error is detected.
		▪ Error data in an authentication application reaches the management limit.

SC9xx: Others

900	D	Electrical total counter error	
		The total count contains something that is not a number.	▪ NVRAM incorrect type ▪ NVRAM defective ▪ NVRAM data scrambled ▪ Unexpected error from external source

920	D	Printer Error 1	
		An internal application error was detected and operation cannot continue.	▪ Software defective ▪ Insufficient memory

921	B	Printer error 2	
		When the application started, the necessary font was not on the SD card.	▪ Font not on the SD card

990	D	Software performance error
		The software attempted to perform an unexpected operation due to: 1) software bug, 2) incorrect internal parameter, 3) insufficient working memory.
		▪ Turn the machine power off/on ▪ Reinstall the controller and/or main firmware **Note**: When this SC occurs, the file name, address, and data will be stored in NVRAM. This information can be checked by using SP7-403. Note the above data and the situation in which this SC occurs. Then report the data and conditions to your technical control center.

991	C	Software continuity error	
		The software attempted to perform an unexpected operation. However, unlike SC990, the object of the error is continuity of the software.	▪ No operation required. Note: This SC code does not appear on the panel, and is only logged.

992	D	Unexpected Software Error	
		Software encountered an unexpected operation not defined under any SC code.	▪ Software defective ▪ An error undetectable by any other SC code occurred

995	D	CPM setting error
	-001	▪ Defective BICU
		Input the serial number with SP5811-004, and turn the main power switch off/on.
	-002	▪ Defective NVRAM on the controller ▪ Defective controller
		1. Install a new NVRAM, and turn off and on the main power switch after SC995-002 has occurred. 2. Reinstall the previous NVRAM or download the information with SP5825-001, after that turn the main power off and on.
	-003	▪ Incorrect type controller installed ▪ Defective controller
		Replace the controller board with the correct type.
	-004	▪ Incorrect model controller installed.
		Replace the controller with the correct model.

997	B	Application function selection error
		Application selected by the operator did not start or end normally due to a software problem. An option required by the application may not be installed.
		▪ Confirm which devices are required for the application. ▪ Make sure all devices are configured correctly. ▪ If the problem is with the fax unit, the nesting of the fax group may be too complicated

998	D	Application start error
		No applications start within 60 sec. after the power is turned on.
		▪ Loose connection of RAM-DIMM, ROM-DIMM ▪ Defective controller ▪ Software problem: check the setting of SP5875-001. If the setting is set to "1 (OFF)", change it to "0 (OFF)". ▪ Check if the RAM-DIMM and ROM-DIMM are correctly connected. ▪ Reinstall the controller system firmware. ▪ Replace the controller.

Note 1

If a problem always occurs under specific conditions (for example. printer driver setting, image file), the problem may be caused by a software error. In this case, the following data and information need to be sent back to your product specialist. Please understand that it may take some time to get a reply on how to solve the problem, because in some cases the design staff in Japan must analyze the data.

- Symptom / Possible Causes / Action taken
- Summary sheet (SP mode "Printer SP", SP1-004 [Print Summary])
- SMC - All (SP5-990-001)
- SMC - Logging (SP5-990-004)
- Printer driver settings used when the problem occurs
- All data displayed on the screen (SC code, error code, and program address where the problem is logged.)
- Image file which causes the problem, if possible

6.2 ELECTRICAL COMPONENT DEFECTS

6.2.1 BLOWN FUSE CONDITIONS

Power Supply Unit

Fuse	Rating	Symptom when turning on the main switch
	120V	
FU101	15A/250V	No response. (5V power to the PSU is not supplied.)
FU102	10A/250V	No response. (5V power to the PSU is not supplied.)
FU201	10A/250V	24V power to the BICU is not supplied. "Cover Open" message is displayed even if the cover is closed.
FU202	10A/250V	24V power to the BICU is not supplied. The power to the finisher or optional PFU cannot be supplied.
FU203	10A/250V	24V and 12V power to the BICU are not supplied. SC may be issued.
FU208	5A/250V	5V power to the BICU is not supplied.

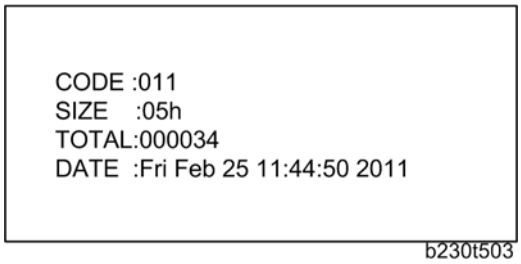
⚠CAUTION

- For continued protection against risk of fire, replace only with same type and rating of fuse.

6.3 JAM DETECTION

6.3.1 PAPER JAM DISPLAY

SP7-507 shows the paper jam history.



- **CODE**: Indicates the jam code.
- **SIZE**: Indicates the paper Size Code.
- **TOTAL**: Indicates the total counter (SP7-502-001).
- **DATE**: indicates the date when the jam occurred.

6.3.2 JAM CODES AND DISPLAY CODES

SP7-504 shows how many jams occurred at each location.

Jam Code SP	Display	Description	LCD Display
7504 1	At Power ON	Tray 1	A1
		Vertical transport sensor at the 1st paper feed unit does not turn off at power-on.	Y1
		Vertical transport sensor at the 2nd paper feed unit does not turn off at power-on.	Y2
		Vertical transport sensor at the 3rd paper feed unit does not turn off at power-on.	Y3

Jam Code SP	Display	Description	LCD Display
↓	At Power ON	Registration sensor does not turn off at power-on.	B
		Paper exit sensor does not turn off at power-on.	B/ Z1
		Duplex inverter sensor does not turn off at power-on.	Z1
		Duplex entrance sensor does not turn off at power-on.	Z1
		Duplex relay sensor does not turn off at power-on.	Z1/ Z2
↓	At Power ON	1 bin relay sensor does not turn off at power-on.	Z1
		1 bin paper exit sensor does not turn off at power-on.	Z1
		Finisher entrance sensor does not turn off at power-on.	R/ Z1
		Finisher paper exit sensor does not turn off at power-on.	R
7504 3	Tray 1: ON	Paper is not fed from tray 1.	A1
7504 4	Tray 2: ON	Paper is not fed from tray 2 (PFU).	Y1
7504 5	Tray 3: ON	Paper is not fed from tray 3 (PFU).	Y2
7504 6	Tray 4: ON	Paper is not fed from tray 4 (PFU).	Y3
7504 8	Bypass: ON	Paper is not fed from the by-pass tray.	A2
7504 9	Duplex: ON	Paper is not fed from the duplex unit.	Z2
7504 13	T2 Transport: ON	Vertical transport sensor does not detect paper from tray 2 (PFU).	Y2

Jam Code SP	Display	Description	LCD Display
7504 14	T3 Transport: ON	Vertical transport sensor does not detect paper from tray 3 (PFU).	Y3
7504 17	Registration: ON	Registration sensor does not detect paper.	A1
7504 20	Paper Exit: ON	Paper exit sensor does not detect paper.	B/ C
7504 24	Inverter: ON (IN)	Inverter sensor does not detect paper.	C
7504 25	Inverter: ON (OUT)	Inverter sensor does not detect paper again after paper has passed this sensor.	Z1
7504 26	Duplex Entrance: ON	Duplex entrance sensor does not detect paper.	Z1
7504 27	Duplex Relay: ON	Duplex relay sensor does not detect paper.	Z1
7504 28	1bin Relay: ON	1 bin relay sensor does not detect paper.	B/ C
7504 29	1bin Paper Exit: ON	1 bin paper exit sensor does not detect paper.	Z1
7504 53	T2 Transport: OFF	Paper stays at the vertical transport sensor of the 1st PFU.	A1/ Y1
7504 54	T3 Transport: OFF	Paper stays at the vertical transport sensor of the 2nd PFU.	A1/ Y1/ Y2
7504 55	T4 Transport: OFF	Paper stays at the vertical transport sensor of the 3rd PFU.	A1/ Y1/ Y2/ Y3
7504 57	Registration: OFF	Paper stays at the registration sensor of the 1st PFU.	B
7504 60	Paper Exit: OFF	Paper stays at the paper exit sensor.	B/ Z1
7504 64	Inverter: OFF (IN)	Paper stays at the paper exit sensor.	Z1

Jam Code SP	Display	Description	LCD Display
7504 65	Inverter: OFF (OUT)	Paper stays again at the paper exit sensor paper has passed this sensor.	Z1
7504 66	Duplex Entrance: OFF (In)	Paper stays at the duplex entrance sensor.	Z1
7504 67	Duplex Exit: OFF (Out)	Paper stays again at the duplex entrance after paper has passed this sensor.	Z1/ Z2
7504 68	1bin: Relay: OFF	Paper stays at the 1 bin relay sensor.	Z1
7504 69	1bin: Paper Exit: OFF	Paper stays at the 1 bin paper exit sensor.	Z1
7504 230	FIN: No Exit Response	The machine does not receive the completion data of the finisher paper exit	R/ Z1
7504 240	FIN: Entrance SN: ON	Paper does not reach to the finisher entrance sensor.	R/ Z1
7504 241	FIN: Entrance SN: OFF	Paper stays at the finisher entrance sensor.	R/ Z1
7504 242	FIN: Paper Exit	Paper jam occurs at the finisher paper exit sensor.	R
7504 243	FIN: Jogger Motor	Paper jam occurs at the jogger motor.	R
7504 244	FIN: Shift Roller Motor	Paper jam occurs at the shift roller motor.	R/ Z1
7504 245	FIN: Position Roller Motor	Paper jam occurs at the gathering roller motor.	R
7504 246	FIN: Exit Guide Motor	Paper jam occurs at the exit guide plate motor.	R
7504 247	FIN: Output Tray Motor	Paper jam occurs at the tray lift motor.	R

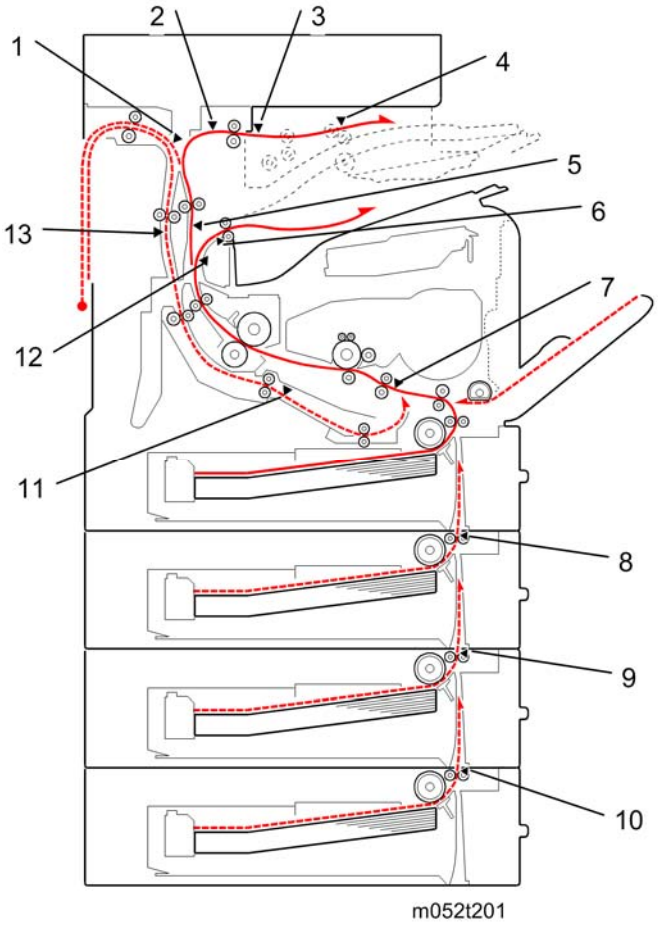
Jam Code SP	Display	Description	LCD Display
7504 248	FIN: Stapler Motor	Paper jam occurs at the stapler motor.	R
7504 249	FIN: Paddle Roller SOL	Paper jam occurs at the stack height lever solenoid.	R
7504 250	FIN: Entrance SN: OFF	The command from the machine is incorrect.	R/ Z1

Paper Size Code

Size Code	Paper Size	Size Code	Paper Size
05	A4 LEF	141	B4 SEF
06	A5 LEF	142	B5 SEF
14	B5 LEF	160	DLT SEF
38	LT LEF	164	LG SEF
44	HLT LEF	166	LT SEF
132	A3 SEF	172	HLT SEF
133	A4 SEF	255	Others
134	A5 SEF	-	-

Jam Code SP	Display	Description	LCD Display
7505 1	At Power ON	DF registration sensor detects paper at power-on.	P
		DF inverter sensor detects paper at power-on.	P
7505 4	Registration: ON	DF registration sensor does not detect paper.	A
7504 8	Inverter: OFF	Paper stays at the DF inverter sensor.	A
7504 54	Inverter: ON	DF inverter sensor does not detect paper.	Y
7504 58	Registration: OFF	Paper stays at the DF registration sensor.	Y

Paper Jam Detection Sensor Location



1. Duplex inverter sensor 2. 1 bin tray paper exit sensor (M052/M053 only) 3. Finisher entrance sensor (M054 only) 4. Finisher paper exit sensor (M054 only) 5. Relay sensor 6. Paper overflow sensor (M052/M053 only)	7. Registration sensor 8. Vertical transport sensor (PFU1) 9. Vertical transport sensor (PFU2) 10. Vertical transport sensor (PFU3) 11. Duplex relay sensor 12. Fusing exit sensor 13. Duplex entrance sensor

ENERGY SAVING

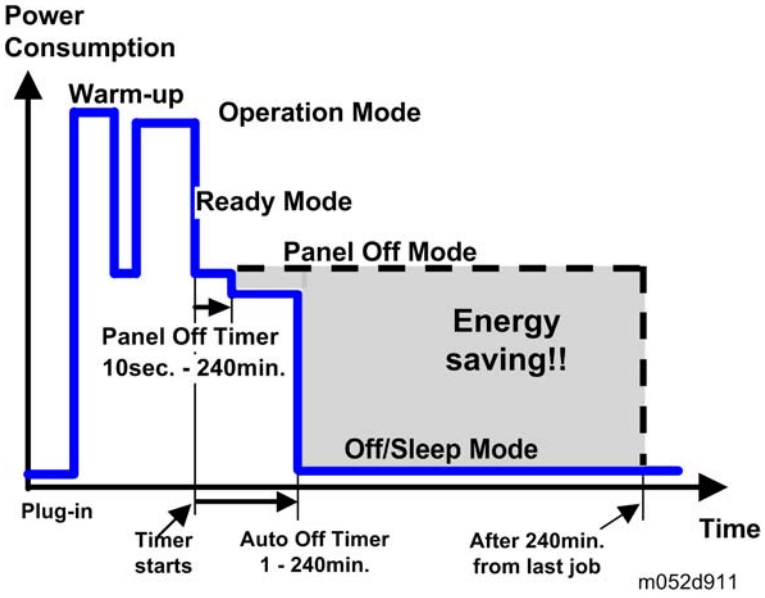
REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

7. ENERGY SAVING

7.1 ENERGY SAVE

7.1.1 ENERGY SAVER MODES

Customers should use energy saver modes properly, to save energy and protect the environment.



The area shaded grey in this diagram represents the amount of energy that is saved when the timers are at the default settings. If the timers are changed, then the energy saved will be different. For example, if the timers are all set to 60 min., the grey area will disappear, and no energy is saved before 60 min. expires.

Timer Settings

The user can set these timers with User Tools (System settings > Timer setting)

- Panel off timer (10 sec – 240 min): Panel Off Mode. Default setting: 1 min.
- Auto off timer (1 – 240 min): Off/Sleep Mode. Default setting: 60 min.

Normally, Panel Off timer < Auto Off timer. But, for example, if Auto Off timer < or = Panel Off timer, the machine goes immediately to Off mode when the Auto Off timer expires. It skips the Panel Off mode.

Example

- Panel off: 2 min.
- Sleep: 1 min.
- The machine goes to sleep mode after 1 minute. Panel Off is not used.

Return to Stand-by Mode

Panel Off Mode

- 1 sec.

Off/Sleep Mode

Recovery time.

- 20 sec.

Recommendation

We recommend that the default settings should be kept.

- If the customer requests that these settings should be changed, please explain that their energy costs could increase, and that they should consider the effects on the environment of extra energy use.
- If it is necessary to change the settings, please try to make sure that the Auto Off timer is not too long. Try with a shorter setting first, such as 30 min., then go to a longer one (such as 60 min.) if the customer is not satisfied.
- If the timers are all set to the maximum value, the machine will not begin saving energy until 240 minutes has expired after the last job. This means that after the customer has finished using the machine for the day, energy will be consumed that could otherwise be saved.
- If you change the settings, the energy consumed can be measured using SP8941, as explained below.

7.1.2 ENERGY SAVE EFFECTIVENESS

SP 8941 (Machine Status) keeps a record of the amount of time that the machine spends in each mode.

- 8941-001: Operating mode
- 8941-002: Standby mode
- 8941-003: Energy saver mode (Panel off)
- 8941-004: Low power mode
- 8941-005: Sleep mode

With this data, and the power consumption values from the specifications, we can estimate the amount of energy that is used by the machine.

This should only be used as a reference value, because the power consumption specifications are measured in a controlled environment with a constant power supply.

To get an exact measurement at the customers site, a watt meter must be used to measure the actual energy consumed.

To use SP8941 to calculate the energy consumed:

- At the start of the measurement period, read the values of SP8941 001 to 005.
- At the end of the measurement period, read the values of SP8941 001 to 005 again.

- Find the amount of time spent in each mode (subtract the earlier measurement from the later measurement).
- Multiply this by the power consumption spec for each mode.
- Convert the result to kWh (kilowatt hours)

Here is an example calculation.

Machine Condition	SP8941: Machine Status	Time at Start (min.) ①	Time at End (min.) ②	Running time (hour) (②-①)/60 = ③	Power consumption Spec. (W) ④	Power consumption (KWH) (③x④)/1000 = ⑤
Operating	001: Operating Time	21089.0	21386.0	4.95	898	4.45
Stand by (Ready)	002: Standby Time	306163.0	308046.0	31.38	179	5.62
Energy save (Panel off)	003: Energy Save Time	74000	75111.0	18.52	148.09	2.74
Low power	004: Low Power Time	148000	150333	38.88	111	4.32
Sleep	005: Off Mode Time	508776.0	520377.0	193.35	1.8	0.35
Total						17.47

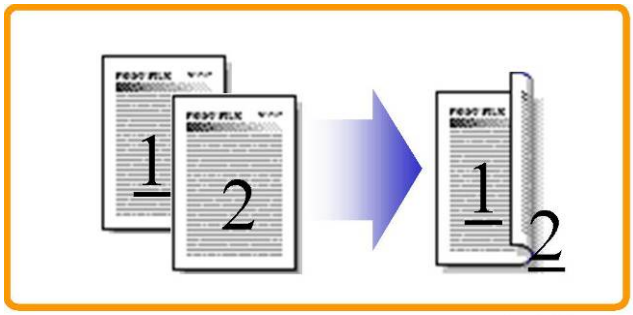
7.2 PAPER SAVE

7.2.1 EFFECTIVENESS OF DUPLEX/COMBINE FUNCTION

Duplexing and the combine functions reduce the amount of paper used. This means that less energy overall is used for paper production, which improves the environment.

1. Duplex:

Reduce paper volume in half!



d062d102

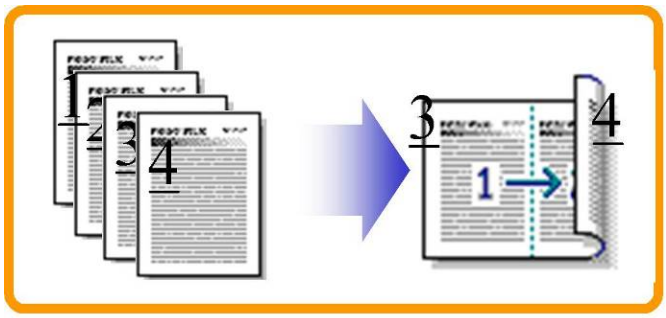
2. Combine mode:

Reduce paper volume in half!

d062d100

3. Duplex + Combine:

Using both features together can further reduce paper volume by 3/4!



d062d101

To check the paper consumption, look at the total counter and the duplex counter.

The total counter counts all pages printed.

- For one duplex page, the total counter goes up by 2.
- For a duplex job of a three-page original, the total counter goes up by 3.

The duplex counter counts pages that have images on both sides.

- For one duplex page, the duplex counter goes up by 1.
- For a duplex job of a three-page original, the duplex counter will only increase by 1, even though two sheets are used.

How to calculate the paper reduction ratio

How to calculate the paper reduction ratio, when compared with Single-sided copying, with no 2-in-1 combine mode

Paper reduction ratio (%) = Number of sheets reduced: A/Number of printed original images: B x 100

- Number of sheets reduced: A

  = Output pages in duplex mode/2 + Number of pages in Single-sided with combine mode + Number of pages in Duplex with combine mode x 3/2

  A = ((2) /2 + (3) + (4) x 3/2
- Number of printed original images: B

  = Total counter + Number of pages in Single-sided with combine mode + Number of pages in Duplex with combine mode

  B = (1) + (3) + (4)
- (1) Total counter: SP 8581 001 (pages)
- (2) Single-sided with duplex mode: SP 8421 001 (pages)
- (3) Single-sided with combine mode: SP 8421 004 (pages)
- (4) Duplex with combine mode: SP 8421 005 (pages)

M052/M053/M054
SERVICE MANUAL APPENDICES

M052/M053/M054 APPENDICES

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APPENDIX:

SPECIFICATIONS

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1. APPENDIX: SPECIFICATIONS

1.1 SPECIFICATIONS

1.1.1 GENERAL SPECIFICATIONS

Mainframe

Note

- In this section, each model codes stand for the following models.
- MF1: Standard model
- MF1m: Fax and 1 bin unit model
- MF1f: Finisher model

Configuration:	Desktop
Print Process:	Laser beam scanning and mono-component development electro-photographic printing
Copy Speed:	MF1: 47 cpm (LT SEF), 45 cpm (A4 SEF) MF1m/MF1f: 52 cpm (LT SEF), 50 cpm (A4 SEF)
Number of scans:	1
Resolution:	Scan: 600 x 600 dpi (book)/ 600 x 300 dpi (ARDF) Print: 1200 x 600 dpi, 600 x 600 dpi
Gradation:	Scan: 600 dpi / 10 bits/pixel Print: 600 dpi / 2 bits/pixel
Original type:	Sheets, book, objects
Maximum original size:	A4/11" x 17"
Original reference position:	Left rear corner
First Copy Time:	10 seconds or less (A4, LT, SEF)
Warm-up Time:	20 seconds or less

<table>
<tr><td>Print Paper Capacity:
(80 g/m^2, 20lb)</td><td colspan="3">Standard tray: 550 sheets
By-pass tray: 100 sheets
Optional paper feed unit: 550 sheets (Three units can be installed in the mainframe.)</td></tr>
<tr><td rowspan="5">Print Paper Size:</td><td colspan="3">See "Supported Paper Sizes"</td></tr>
<tr><td>-</td><td>Minimum</td><td>Maximum</td></tr>
<tr><td>Standard Tray</td><td>98 x 140 mm</td><td>216 x 356 mm</td></tr>
<tr><td>By-pass</td><td>64 x 140 mm</td><td>216 x 900 mm</td></tr>
<tr><td>Optional Tray</td><td>98 x 160 mm</td><td>216 x 356 mm</td></tr>
<tr><td>Printing Paper Weight:</td><td colspan="3">Standard tray: 52-220 g/m^2 (14-59 lb)
By-pass tray: 52-220 g/m^2 (14-59 lb)
Optional paper feed tray: 52-220 g/m^2 (14-59 lb)
Duplex: 60-163 g/m^2 (16-44 lb)</td></tr>
<tr><td>Output Paper Capacity:</td><td colspan="3">Output Tray (MF1/MF1m):
Up to 500 sheets (A4/ LT/ 80 g/m^2 / 20 lb)
1 Bin Tray (MF1m):
Up to 100 sheets (A4/ LT/ 80 g/m^2 / 20 lb)
Finisher Output Tray (MF1f):
Up to 250 sheets (LG/ 80 g/m^2 / 20 lb)</td></tr>
<tr><td>Memory:</td><td colspan="3">Standard: 1GB</td></tr>
<tr><td>Power Source:</td><td colspan="3">120V -127 V, 60 Hz: More than 12 A (for North America)
220 V - 240 V, 50/60 Hz: More than 8 A (for Europe/Asia)</td></tr>
<tr><td>Power Consumption:</td><td colspan="3">120 V: 1500 W or less
220-240 V: 1500 W or less
Energy Saver:
5 W or less for MF1/MF1f
8W or less for MF1m</td></tr>
<tr><td>Noise Emission:
(Sound Power Level)</td><td colspan="3">MF1: 71.8 dB (A) for mainframe, 75.8 dB (A) for full system
MF1m/MF1f: 72.0 dB (A) for mainframe, 76.0 dB (A) for full system</td></tr>
</table>

<table>
<tr><td>Dimensions (W x D x H):</td><td colspan="2">MF1/MF1m:
460 x 510 x 686 mm (18.1" x 20.1" x 27.0"), (including ARDF and operation panel)
MF1f:
460 x 615 x 686 mm (18.1" x 24.2" x 27.0"), (including ARDF and operation panel)</td></tr>
<tr><td>Weight:</td><td colspan="2">MF1: 40 kg or less (88.2 lb)
MF1m: 50 kg or less (110.3 lb)
MF1f 55 kg or less (121.3 lb)</td></tr>
<tr><td>Continuous copy:</td><td colspan="2">Up to 999 sheets</td></tr>
<tr><td rowspan="8">Zoom:</td><td colspan="2">Arbitrary:
From 25 to 400% (1% step) for Book
From 25 to 200% (1% step) for ARDF</td></tr>
<tr><td colspan="2">Fixed:</td></tr>
<tr><td>North America</td><td>EU/ASIA</td></tr>
<tr><td>65%</td><td>50%</td></tr>
<tr><td>78%</td><td>71%</td></tr>
<tr><td>93%</td><td>93%</td></tr>
<tr><td>100%</td><td>100%</td></tr>
<tr><td>129%</td><td>141%</td></tr>
<tr><td>155%</td><td>200%</td></tr>
<tr><td>Memory:</td><td colspan="2">1 GB</td></tr>
<tr><td>HDD:</td><td colspan="2">128 GB</td></tr>
</table>

Printer

Printer Languages:	PCL5e, PCL6, PS3, IPDS (option)
Resolution:	PCL5e: 600 x 600 dpi (1 bit), 300 x 300 dpi PCL6: 1200 x 600 dpi (1 bit), 600 x 600 dpi (1 bit) PS3: 1200 x 600 dpi (1 bit), 600 x 600 dpi (1 bit) IPDS: 600 x 600 dpi (1 bit), 300 x 300 dpi (1 bit)
Resident Fonts:	PCL5e/ 6: 45 fonts + 13 International fonts Adobe PostScript 3: 136 fonts IPDS: 108 fonts (option)
Host Interfaces:	Ethernet (100 Base-TX/ 10 Base-T): Standard USB2.0 (Type A/ B): Standard IEEE802.11a/g, g (Wireless LAN): Optional Gigabit Ethernet (1000 Base-T): Optional Bluetooth: Optional
Network Protocols:	TCP/IP (IPv4, IPv6), Bonjour, IPX/SPX

Scanner

Scanning Speed	B&W: over 30ipm (A4, SEF, 200dpi, Mono 1bit, MH compression with ADF) Color: over 30ipm (A4, SEF, 200dpi with FC letter/ photo/ JPEG standard compression with ADF)
Standard Scanner Resolution:	DF: 600 x 300 dpi Book: 600 x 600 dpi
Network Interface:	100/10Base-TX, IEEE802.11a/g

ARDF

Paper Size/Weight:	Simplex	Size	A4 to A5, LG to HLT
		Weight	52 to 128 g/m^2 (14 to 34 lb.)
	Duplex	Size	A4 to A5, LG to HLT
		Weight	60 to 105 g/m^2 (17 to 28 lb.)
Table Capacity:	50 sheets (80 g/m^2, 20 lb.)		
Separation:	Friction pad		
Original Transport:	Roller transport		
Original Feed Order:	From the top original		
Power Source:	DC 24V, 5V from the scanner unit		
Power Consumption:	35 W or less		
Dimensions (W x D x H):	450 x 400 x 110 mm (17.7" x 15.7" x 4.3")		
Weight:	5 kg (11 lb.) or less		

Internal Finisher

Paper Size:	A6 to LG
Paper Weight:	52 to 256 g/m^2 (14 to 68 lb.)
Tray Capacity:	250 sheets: A4, LT or smaller
Staple capacity:	50 sheets (A4, LT or smaller)
Staple position:	1 position
Staple replenishment:	Cartridge (5000 staples)

FCU

Type:	Desktop type transceiver
Circuit:	PSTN PBX
Connection:	Direct couple
Original Size:	Book (Face down) Maximum Length: 356 mm [14 inch] Maximum Width: 216 mm [8.5 inch] ARDF (Face up) (Single-sided document) Length: 139 - 1200 mm [5.5 - 47.2 inch] Width: 139 - 216 mm [5.5 - 8.5 inch] (Double-sided document) Length: 160 - 356 mm [6.3 - 14.0 inch] Width: 139 - 216 mm [5.5 - 8.5 inch]
Scanning Method:	Flat bed, with CCD
Resolution:	G3: 8 x 3.85 lines/mm, 200 x 100 dpi (Standard character), 8 x 7.7 lines/mm, 200 x 200 dpi (Detail character), 8 x 15.4 lines/mm (Fine character: optional), 16 x 15.4 lines/mm, 400 x 400 dpi (Super Fine character: optional) Note ▪ Optional Expansion Memory required
Transmission Time:	G3: 3 s at 28800 bps; Measured with G3 ECM using memory for an ITU-T #1 test document (Slerexe letter) at standard resolution
Data Compression:	MH, MR, MMR, JBIG
Protocol:	Group 3 with ECM
Modulation:	V.34, V.17 (TCM), V.29, V.17 (QAM), V.27ter (PHM), V.8, V.21 (FSK)

Data Rate:	G3: 33600/31200/28800/26400/24000/21600/ 19200/16800/14400/12000/9600/7200/4800/2400 bps Automatic fallback
I/O Rate:	With ECM: 0 ms/line Without ECM: 5, 10, 20, or 40 ms/line
Memory Capacity:	ECM: 128 KB SAF Standard: 4 MB With optional Expansion Memory: 28 MB Page Memory Standard: 4 MB (Print: 2 MB + Scanner: 2 MB) With optional Expansion Memory: 8 MB (Print 4 MB + Scanner: 4 MB)

Capabilities of Programmable Items

The following table shows the capabilities of each programmable items.

Item	Max.
Total Destinations in Address Book	2000
Groups	100
Destination per Group	500
Destinations for All Files	500
Programs	100
Auto Document	6
Special Senders	30
Specific Senders	30

The following table shows how the capabilities of the document memory will change after the Expansion Memory are installed.

	Without the Expansion Memory	With the Expansion Memory
Memory Transmission file	400	400
Maximum number of page for memory transmission	1000	1000
Memory capacity for memory transmission (See the Note below)	320	2240

Note

- Measured using an ITU-T #1 test document (Slerexe letter) at standard resolution, auto image density mode, and Text mode.

IFAX Specifications

Connectivity:	Local area network Ethernet 100base-Tx/10base-T IEEE802.11a/g (wireless LAN), 1000 Base-T
Resolution:	Main scan: 400 dpi, 200 dpi Sub scan: 400 dpi, 200 dpi, 100 dpi Note ▪ To use 400 dpi, IFAX SW01 Bit 4 must be set to “1”.
Transmission Time:	1 s (through a LAN to the server) Condition: ITU-T #1 test document (Selerexe Letter) MTF correction: OFF TTI: None Resolution: 200 x 100 dpi Communication speed: 10 Mbps Correspondent device: E-mail server Line conditions: No terminal access
Document Size:	Maximum message width is A4/LT.
E-mail File Format:	Single/multi-part MIME conversion Image: TIFF-F (MH, MR, MMR)
Protocol:	**Transmission:** SMTP, TCP/IP **Reception:** POP3, SMTP, IMAP4, TCP/IP
Data Rate:	100 Mbps(100base-Tx) 10 Mbps (10base-T)
Authentication Method:	SMTP-AUTH POP before SMTP A-POP
Remark:	The machine must be set up as an e-mail client before installation. Any client PCs connected to the machine through a LAN must also be e-mail clients, or some features will not work (e.g. Autorouting).

IP-FAX Specifications

Network:	Local Area Network Ethernet/10base-T, 100base-TX IEEE802.11a/g (wireless LAN), 1000 Base-T
Scan line density:	8 x 3.85 lines/mm, 200x100dpi (standard character), 8 x 7.7lines/mm, 200x200dpi (detail character), 8 x 15.4lines/mm (fine character: optional expansion memory required), 16 x 15.4lines/mm, 400x400dpi (super fine character: optional expansion memory required)
Original size:	A4
Maximum scanning size:	A4, 216 x 356 mm, Irregular, 216 x 1200 mm
Transmission protocol:	Recommendation: T.38, TCP, UDP/IP communication, SIP (RFC 3261 compliant), H.323 v2
Compatible machines:	IP-Fax compatible machines
IP-Fax transmission function:	Specify IP address and send fax to an IP-Fax compatible fax through a network. Also capable of sending fax from a G3 fax connected to the public telephone lines via a VoIP gateway.
IP-Fax reception function:	Receive a fax sent from an IP-Fax compatible fax through a network. Also capable of receiving fax from a G3 fax connected the public telephone lines via a VoIP gateway.

1.1.2 OPTION SPECIFICATIONS

Paper Feed Unit (M375/M376)

Paper Feed System:	Friction pad
Paper Height Detection:	4 steps (100%, 70%, 30% and 10% (Near end))
Capacity:	550 sheets
Paper Weight:	52 to 220 g/m^2 (14 to 80 lb.)
Paper Size:	A5/HLT to A4/LG SEF
Power Source:	DC 24V, 5V (from the main frame)
Power Consumption:	Less than 20 W
Dimensions (W x D x H):	M375: 450 mm x 515.6 mm x 150 mm (17.8" × 20.3" × 5.9") M376: 450 mm x 515.6 mm x 220 mm (17.8" × 20.3" x 8.7")
Weight:	M375: 9 kg (19.9 lb.) or less M376: 12 kg (26.5 lb.) or less

1.2 SUPPORTED PAPER SIZES

Paper	Size (W x L)	Main Tray		PFU		By-pass Tray		Duplex
		NA	E/A	NA	E/A	NA	E/A	
A4 SEF	210 x 297 mm	Y	Y	Y	Y	Y#	Y#	Y
A5 SEF	148 x 210 mm	Y#	Y	Y#	Y	Y#	Y#	Y
A6 SEF	105 x 148 mm	Y#	Y	Y#	Y	Y#	Y#	Y
B5 SEF	182 x 257 mm	Y#	Y#	Y#	Y#	Y#	Y#	Y
B6 SEF	128 x 182 mm	Y#	Y#	Y#	Y#	Y#	Y#	Y
Letter SEF	8.5" x 11"	Y	Y	Y	Y	Y#	Y#	Y
Legal SEF	8.5" x 14"	Y	Y	Y	Y	Y#	Y#	Y
Half Letter SEF	5.5" x 8.5"	Y	Y#	Y	Y#	Y#	Y#	Y
Executive SEF	7.25" x 10.5"	Y	Y	Y	Y	Y#	Y#	Y
F/GL SEF	8" x 13"	Y#	Y#	Y#	Y#	Y#	Y#	Y
Foolscap SEF	8.5" x 13"	Y#	Y#	Y#	Y#	Y#	Y#	Y
Folio SEF	8.25" x 13"	Y#	Y#	Y#	Y#	Y#	Y#	Y
16K SEF	7.25" x 10.5"	Y#	Y#	Y#	Y#	Y#	Y#	Y
Custom (Width)	mm	98 x 216				70 x 216		102 x 216
	inch	3.94" x 8.5"				2.76" x 8.5"		4.02" x 8.5"
Custom (Length)	mm	148 x 355.6				127 x 1260		148 x 355.6

Paper	Size (W x L)	Main Tray		PFU		By-pass Tray		Duplex
		NA	E/A	NA	E/A	NA	E/A	
	inch	5.83" x 14"				5.00" x 49.61"		5.83" x 14"
Com10 Env.	4.13" x 9.5"	Y#	Y#	Y#	Y#	Y#	Y#	N
Monarch Env.	3.88" x 7.5"	Y#	Y#	Y#	Y#	Y#	Y#	N
C6 Env.	114 x 162 mm	Y#	Y#	Y#	Y#	Y#	Y#	N
C5 Env.	162 x 229 mm	Y#	Y#	Y#	Y#	Y#	Y#	N
DL Env.	110 x 220 mm	Y#	Y#	Y#	Y#	Y#	Y#	N

Y: Supported: the sensor detects the paper size.

Y#: Supported: the user specifies the paper size.

N: Not supported

1.3 SOFTWARE ACCESSORIES

The printer drivers and utility software are provided on one CD-ROM. An auto-run installer allows you to select which components to install.

1.3.1 PRINTER DRIVERS

Printer Language	Windows XP	Widows Vista	Windows 7	Macintosh
PCL 5e/6	Yes	Yes	Yes	No
PS3	Yes	Yes	Yes	Yes

Note

- The PS3 drivers are all genuine AdobePS drivers, which uses Microsoft PS. A PPD file for each operating system is provided with the driver.
- The PS3 driver for Macintosh supports Mac OS 7.6 or later versions.

1.3.2 TWAIN DRIVER

This driver is required to scan an original using a scanner. To use the machine as a network TWAIN scanner, this driver must be installed.

System Requirements

Operating system [*1]

- Windows XP/Vista/7
- Windows Server 2003/2003 R2/2008/2008 R2

[*1] Operates in 32-bit compatibility mode on 64-bit operating systems

Display resolution

- 800 × 600 pixels, 256 colors or higher

1.3.3 LAN-FAX DRIVER

This driver is required to use LAN-Fax functions.

System Requirements

Operating system [*1]

- Windows XP/Vista/7
- Windows Server 2003/2003 R2/2008/2008 R2

Display resolution

- VGA 640 × 480 pixels or more

APPENDIX:
PREVENTIVE MAINTENANCE TABLES

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		None

2. APPENDIX: PREVENTIVE MAINTENANCE

2.1 MAINTENANCE TABLES

2.1.1 PREVENTIVE MAINTENANCE ITEMS

To enable the machine for maintenance by the service technician, the meter-charge mode must be set to "enabled" with SP5930 and "0: Service" with SP5-067-001.

The table below shows the PM items serviced by the service technician.

After completing a PM procedure, reset the PM counter for the replaced part with SP7-804.

Mainframe

Paper

Chart: A4 (LT)/5%

Mode: 2 copies / original (prints/job)

Ratio 25%

Environment: Normal temperature and humidity

Yield may change depending on circumstances and print conditions.

Symbol keys: C: Clean, R: Replace, L: Lubricant, I: Inspect

Item	6/25 K	120 K	EM	Remarks
Scanner				
Reflector	-	-	C	Optics cloth
1st/2nd/3rd mirrors	-	-	C	Optics cloth
Front and Rear Rails	-	-	C	Dry cloth
Exposure Glass	-	-	C	Dry cloth; alcohol
ADF Exposure Glass	-	-	C	Dry cloth; alcohol
PCDU				
AIO	R	-	-	
Transfer				
Transfer Roller	-	R	-	

Item	6/25 K	120 K	EM	Remarks
Fusing				
Fusing Unit	-	R	-	
Paper Path				
Paper Feed Roller	-	R	C	Damp cloth
Friction Pad	-	R	C	Dry cloth
Registration Roller	-	-	C	Damp cloth
Dust Shield Glass	-	-	C	Optical cloth, Blower

2.1.2 OTHER YIELD PARTS

The parts mentioned in these tables have a target yield. However, the total copy/print volume made by the machine will not reach the target yield within the machine's targeted lifetime if the machine is used under the target usage conditions (ACV, color ratio, P/J, and C/O). So, these parts are categorized not as PM parts but as yield parts (EM parts).

ARDF

Item	EM	Remarks
Pick-up Roller	C	Damp cloth; alcohol
Feed Roller	C	Damp cloth; alcohol
Friction Pad	C	Damp cloth; alcohol
Sensors	C	Blower brush
White Plate	C	Dry or damp cloth
Transport Roller	C	Damp cloth; alcohol
Exit Roller	C	Damp cloth; alcohol
Inverter Roller	C	Damp cloth; alcohol
Idle Rollers	C	Damp cloth; alcohol

Internal Finisher

Item	EM	Remarks
Sensors	C	Blower brush
Rollers	C	Damp cloth; alcohol

One-tray Paper Feed Unit (M375/M376)

Item	EM	Remarks
Feed Roller	C	Dry cloth
Separation Roller	C	Dry cloth
Pick-up Roller	C	Dry cloth
Relay Roller	C	Damp cloth
Bottom Plate Pad	C	Damp cloth
Sensors	C	Blower brush

1 Bin Tray

Items	EM	Remarks
Rollers	C	Damp cloth
Exit Tray	C	Damp cloth
Exit Sensor	C	Blower brush
Paper Sensor	C	Blower brush
Bearing	C	S552R

M381

FAX OPTION TYPE SP5200

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FAX OPTION TYPE SP5200 (M381)

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READ THIS FIRST

Safety and Symbols

Replacement Procedure Safety

⚠CAUTION

- Turn off the main power switch and unplug the machine before beginning any of the replacement procedures in this manual.

Symbols Used in this Manual

This manual uses the following symbols.

☛: See or Refer to

: Screws

: Connector

: Clip ring

: E-ring

: Clamp

1. INSTALLATION PROCEDURE

1.1 FAX OPTION INSTALLATION

The installation procedure for the fax unit option (M381) and memory unit (G578) is described in the Filed Service Manual of the M052/M053/M054. For details, refer to the Filed Service Manual of the M052/M053/M054.

2. REPLACEMENT AND ADJUSTMENT

2.1 FCU

1. When you replace the FCU board, remove the MBU board from the old FCU board and install it on the new FCU board.
2. Set the correct date and time with the User Tools: User Tools > System Settings > Timer Setting > Set Date/Time.

Note

- Do not turn off the battery switch (SW1).
- Do SP6101 to print the system parameters, and check the settings.

3. TROUBLESHOOTING

3.1 ERROR CODES

If an error code occurs, retry the communication. If the same problem occurs, try to fix the problem as suggested below. Note that some error codes appear only in the error code display and on the service report.

Code	Meaning	Suggested Cause/Action
0-00	DIS/NSF not detected within 40 s of Start being pressed	▪ Check the line connection. ▪ The machine at the other end may be incompatible. ▪ Replace the FCU. ▪ Check for DIS/NSF with an oscilloscope. ▪ If the rx signal is weak, there may be a bad line.
0-01	DCN received unexpectedly	▪ The other party is out of paper or has a jammed printer. ▪ The other party pressed Stop during communication.
0-03	Incompatible modem at the other end	The other terminal is incompatible.

Code	Meaning	Suggested Cause/Action
0-04	CFR or FTT not received after modem training	▪ Check the line connection. ▪ Try changing the tx level and/or cable equalizer settings. ▪ Replace the FCU. ▪ The other terminal may be faulty; try sending to another machine. ▪ If the rx signal is weak or defective, there may be a bad line. **Cross reference** Tx level - NCU Parameter 01 (PSTN) Cable equalizer - G3 Switch 07 (PSTN) Dedicated Tx parameters in Service Program Mode
0-05	Modem training fails even G3 shifts down to 2400 bps.	▪ Check the line connection. ▪ Try adjusting the tx level and/or cable equalizer. ▪ Replace the FCU. ▪ Check for line problems. **Cross reference** See error code 0-04.
0-06	The other terminal did not reply to DCS	▪ Check the line connection. ▪ Try adjusting the tx level and/or cable equalizer settings. ▪ Replace the FCU. ▪ The other end may be defective or incompatible; try sending to another machine. ▪ Check for line problems. **Cross reference** See error code 0-04.

Code	Meaning	Suggested Cause/Action
0-07	No post-message response from the other end after a page was sent	▪ Check the line connection. ▪ Replace the FCU. ▪ The other end may have jammed or run out of paper. ▪ The other end user may have disconnected the call. ▪ Check for a bad line. ▪ The other end may be defective; try sending to another machine.
0-08	The other end sent RTN or PIN after receiving a page, because there were too many errors	▪ Check the line connection. ▪ Replace the FCU. ▪ The other end may have jammed, or run out of paper or memory space. ▪ Try adjusting the tx level and/or cable equalizer settings. ▪ The other end may have a defective modem/FCU; try sending to another machine. ▪ Check for line problems and noise. **Cross reference** ▪ Tx level - NCU Parameter 01 (PSTN) ▪ Cable equalizer - G3 Switch 07 (PSTN) ▪ Dedicated Tx parameters in Service Program Mode
0-14	Non-standard post message response code received	▪ Incompatible or defective remote terminal; try sending to another machine. ▪ Noisy line: resend. ▪ Try adjusting the tx level and/or cable equalizer settings. ▪ Replace the FCU. **Cross reference** See error code 0-08.

Code	Meaning	Suggested Cause/Action
0-15	The other terminal is not capable of specific functions.	The other terminal is not capable of accepting the following functions, or the other terminal's memory is full. ▪ Confidential rx ▪ Transfer function ▪ SEP/SUB/PWD/SID
0-16	CFR or FTT not detected after modem training in confidential or transfer mode	▪ Check the line connection. ▪ Replace the FCU. ▪ Try adjusting the tx level and/or cable equalizer settings. ▪ The other end may have disconnected, or it may be defective; try calling another machine. ▪ If the rx signal level is too low, there may be a line problem. **Cross reference** See error code 0-08.
0-20	Facsimile data not received within 6 s of retraining	▪ Check the line connection. ▪ Replace the FCU. ▪ Check for line problems. ▪ Try calling another fax machine. ▪ Try adjusting the reconstruction time for the first line and/or rx cable equalizer setting. **Cross reference** Reconstruction time - G3 Switch 0A, bit 6 Rx cable equalizer - G3 Switch 07 (PSTN)
0-21	EOL signal (end-of-line) from the other end not received within 5 s of the previous EOL signal	▪ Check the connections between the FCU and line. ▪ Check for line noise or other line problems. ▪ Replace the FCU. ▪ The remote machine may be defective or may have disconnected. **Cross reference** Maximum interval between EOLs and between ECM frames - G3 Bit Switch 0A, bit 4

Code	Meaning	Suggested Cause/Action
0-22	The signal from the other end was interrupted for more than the acceptable modem carrier drop time (default: 200 ms)	▪ Check the line connection. ▪ Replace the FCU. ▪ Defective remote terminal. ▪ Check for line noise or other line problems. ▪ Try adjusting the acceptable modem carrier drop time. **Cross reference** Acceptable modem carrier drop time - G3 Switch 0A, bits 0 and 1
0-23	Too many errors during reception	▪ Check the line connection. ▪ Replace the FCU. ▪ Defective remote terminal ▪ Check for line noise or other line problems. ▪ Try asking the other end to adjust their tx level. ▪ Try adjusting the rx cable equalizer setting and/or rx error criteria. **Cross reference** Rx cable equalizer - G3 Switch 07 (PSTN) Rx error criteria - Communication Switch 02, bits 0 and 1
0-30	The other terminal did not reply to NSS(A) in AI short protocol mode	▪ Check the line connection. ▪ Try adjusting the tx level and/or cable equalizer settings. ▪ The other terminal may not be compatible. **Cross reference** Dedicated tx parameters - Section 4
0-32	The other terminal sent a DCS, which contained functions that the receiving machine cannot handle.	▪ Check the protocol dump list. ▪ Ask the other party to contact the manufacturer.
0-33	The data reception (not ECM) is not completed within 10 minutes.	▪ Check the line connection. ▪ The other terminal may have a defective modem/FCU.

Code	Meaning	Suggested Cause/Action
0-52	Polarity changed during communication	▪ Check the line connection. Retry communication.
0-55	FCU does not detect the SG3.	▪ FCU firmware or board defective. ▪ SG3 firmware or board defective.
0-56	The stored message data exceeds the capacity of the mailbox in the SG3.	▪ SG3 firmware or board defective.
0-70	The communication mode specified in CM/JM was not available (V.8 calling and called terminal)	▪ The other terminal did not have a compatible communication mode (e.g., the other terminal was a V.34 data modem and not a fax modem.) ▪ A polling tx file was not ready at the other terminal when polling rx was initiated from the calling terminal.
0-74	The calling terminal fell back to T.30 mode, because it could not detect ANSam after sending CI.	▪ The calling terminal could not detect ANSam due to noise, etc. ▪ ANSam was too short to detect. ▪ Check the line connection and condition. ▪ Try making a call to another V.8/V.34 fax.
0-75	The called terminal fell back to T.30 mode, because it could not detect a CM in response to ANSam (ANSam timeout).	▪ The terminal could not detect ANSam. ▪ Check the line connection and condition. ▪ Try receiving a call from another V.8/V.34 fax.
0-76	The calling terminal fell back to T.30 mode, because it could not detect a JM in response to CM (CM timeout).	▪ The called terminal could not detect a CM due to noise, etc. ▪ Check the line connection and condition. ▪ Try making a call to another V.8/V.34 fax.

Code	Meaning	Suggested Cause/Action
0-77	The called terminal fell back to T.30 mode, because it could not detect a CJ in response to JM (JM timeout).	▪ The calling terminal could not detect a JM due to noise, etc. ▪ A network that has narrow bandwidth cannot pass JM to the other end. ▪ Check the line connection and condition. ▪ Try receiving a call from another V.8/V.34 fax.
0-79	The called terminal detected CI while waiting for a V.21 signal.	▪ Check for line noise or other line problems. ▪ If this error occurs, the called terminal falls back to T.30 mode.
0-80	The line was disconnected due to a timeout in V.34 phase 2 – line probing.	▪ The guard timer expired while starting these phases. Serious noise, narrow bandwidth, or low signal level can cause these errors. If these errors happen at the transmitting terminal: ▪ Try making a call at a later time. ▪ Try using V.17 or a slower modem using dedicated tx parameters. ▪ Try increasing the tx level. ▪ Try adjusting the tx cable equalizer setting. If these errors happen at the receiving terminal: ▪ Try adjusting the rx cable equalizer setting. ▪ Try increasing the tx level. ▪ Try using V.17 or a slower modem if the same error is frequent when receiving from multiple senders.
0-81	The line was disconnected due to a timeout in V.34 phase 3 – equalizer training.	
0-82	The line was disconnected due to a timeout in the V.34 phase 4 – control channel start-up.	
0-83	The line was disconnected due to a timeout in the V.34 control channel restart sequence.	
0-84	The line was disconnected due to abnormal signaling in V.34 phase 4 – control channel start-up.	▪ The signal did not stop within 10 s. ▪ Turn off the machine, then turn it back on. ▪ If the same error is frequent, replace the FCU.
0-85	The line was disconnected due to abnormal signaling in V.34 control channel restart.	▪ The signal did not stop within 10 s. ▪ Turn off the machine, then turn it back on. ▪ If the same error is frequent, replace the FCU.

Code	Meaning	Suggested Cause/Action
0-86	The line was disconnected because the other terminal requested a data rate using MPh that was not available in the currently selected symbol rate.	▪ The other terminal was incompatible. ▪ Ask the other party to contact the manufacturer.
0-87	The control channel started after an unsuccessful primary channel.	▪ The receiving terminal restarted the control channel because data reception in the primary channel was not successful. ▪ This does not result in an error communication.
0-88	The line was disconnected because PPR was transmitted/received 9 (default) times within the same ECM frame.	▪ Try using a lower data rate at the start. ▪ Try adjusting the cable equalizer setting.
2-11	Only one V.21 connection flag was received	▪ Replace the FCU.
2-12	Modem clock irregularity	▪ Replace the FCU.
2-13	Modem initialization error	▪ Turn off the machine, then turn it back on. ▪ Update the modem ROM. ▪ Replace the FCU.
2-23	JBIG compression or reconstruction error	▪ Turn off the machine, then turn it back on.
2-24	JBIG ASIC error	▪ Turn off the machine, then turn it back on.
2-25	JBIG data reconstruction error (BIH error)	▪ JBIG data error ▪ Check the sender's JBIG function. ▪ Update the MBU ROM.
2-26	JBIG data reconstruction error (Float marker error)	
2-27	JBIG data reconstruction error (End marker error)	

Code	Meaning	Suggested Cause/Action
2-28	JBIG data reconstruction error (Timeout)	
2-29	JBIG trailing edge maker error	▪ FCU defective ▪ Check the destination device.
2-50	The machine resets itself for a fatal FCU system error	▪ If this is frequent, update the ROM, or replace the FCU.
2-51	The machine resets itself because of a fatal communication error	▪ If this is frequent, update the ROM, or replace the FCU.
2-53	Snd msg() in the manual task is an error because the mailbox for the operation task is full.	▪ The user did the same operation many times, and this gave too much load to the machine.
4-01	Line current was cut	▪ Check the line connector. ▪ Check for line problems. ▪ Replace the FCU.
4-10	Communication failed because of an ID Code mismatch (Closed Network) or Tel. No./CSI mismatch (Protection against Wrong Connections)	▪ Get the ID Codes the same and/or the CSIs programmed correctly, then resend. ▪ The machine at the other end may be defective.
5-10	DCR timer expired	▪ Replace the FCU.
5-20	Storage impossible because of a lack of memory	▪ Temporary memory shortage. ▪ Test the SAF memory.
5-21	Memory overflow	

Code	Meaning	Suggested Cause/Action
5-23	Print data error when printing a substitute rx or confidential rx message	▪ Test the SAF memory. ▪ Ask the other end to resend the message.
5-25	SAF file access error	▪ Replace an SD card or HDD. ▪ Replace the FCU.
6-00	G3 ECM - T1 time out during reception of facsimile data	▪ Try adjusting the rx cable equalizer. ▪ Replace the FCU.
6-01	G3 ECM - no V.21 signal was received	
6-02	G3 ECM - EOR was received	
6-04	G3 ECM - RTC not detected	▪ Check the line connection. ▪ Check for a bad line or defective remote terminal. ▪ Replace the FCU.
6-05	G3 ECM - facsimile data frame not received within 18 s of CFR, but there was no line fail	▪ Check the line connection. ▪ Check for a bad line or defective remote terminal. ▪ Replace the FCU. ▪ Try adjusting the rx cable equalizer **Cross reference** ▪ Rx cable equalizer - G3 Switch 07 (PSTN)
6-06	G3 ECM - coding/decoding error	▪ Defective FCU. ▪ The other terminal may be defective.
6-08	G3 ECM - PIP/PIN received in reply to PPS.NULL	▪ The other end pressed Stop during communication. ▪ The other terminal may be defective.

Code	Meaning	Suggested Cause/Action
6-09	G3 ECM - ERR received	▪ Check for a noisy line. ▪ Adjust the tx levels of the communicating machines. ▪ See code 6-05.
6-10	G3 ECM - error frames still received at the other end after all communication attempts at 2400 bps	▪ Check for line noise. ▪ Adjust the tx level (use NCU parameter 01 or the dedicated tx parameter for that address). ▪ Check the line connection. ▪ Defective remote terminal.
6-21	V.21 flag detected during high speed modem communication	▪ The other terminal may be defective or incompatible.
6-22	The machine resets the sequence because of an abnormal handshake in the V.34 control channel	▪ Check for line noise. ▪ If the same error occurs frequently, replace the FCU. ▪ Defective remote terminal.
6-99	V.21 signal not stopped within 6 s	▪ Replace the FCU.
13-17	SIP user name registration error	▪ Double registration of the SIP user name. ▪ Capacity for user-name registration in the SIP server is not sufficient.
13-18	SIP server access error	▪ Incorrect initial setting for the SIP server. ▪ Defective SIP server.
13-24	SIP authentication error	▪ Registered password in the device does not match the password in the SIP server.
13-25	Network I/F setting error	▪ IPV4 is not active in the active protocol setting. ▪ IP address of the device is not registered.
13-26	Network I/F setting error at power on	▪ Active protocol setting does not match the I/F setting for SIP server. ▪ IP address of the device is not registered.
13-27	IP address setting error	▪ IP address of the device is not registered.

Code	Meaning	Suggested Cause/Action
14-00	SMTP Send Error	▪ Error occurred during sending to the SMTP server. Occurs for any error other than 14-01 to 16. For example, the mail address of the system administrator is not registered.
14-01	SMTP Connection Failed	▪ Failed to connect to the SMTP server (timeout) because the server could not be found. ▪ The PC is not ready to transfer files. ▪ SMTP server not functioning correctly. ▪ The DNS IP address is not registered. ▪ Network not operating correctly. ▪ Destination folder selection not correct.
14-02	No Service by SMTP Service (421)	▪ SMTP server operating incorrectly, or the destination for direct SMTP sending is not correct. ▪ Contact the system administrator and check that the SMTP server has the correct settings and operates correctly. ▪ Contact the system administrator for direct SMTP sending and check the sending destination.

Code	Meaning	Suggested Cause/Action
14-03	Access to SMTP Server Denied (450)	▪ Failed to access the SMTP server because the access is denied. ▪ SMTP server operating incorrectly. Contact the system administrator to determine if there is a problem with the SMTP server and to check that the SMTP server settings are correct. ▪ Folder send destination is incorrect. Contact the system administrator to determine that the SMTP server settings and path to the server are correct. ▪ Device settings incorrect. Confirm that the user name and password settings are correct. ▪ Direct SMTP destination incorrect. Contact the system administrator to determine if there is a problem at the destination at that the settings at the destination are correct.
14-04	Access to SMTP Server Denied (550)	▪ SMTP server operating incorrectly ▪ Direct SMTP sending not operating correctly
14-05	SMTP Server HDD Full (452)	▪ Failed to access the SMTP server because the HDD on the server is full. ▪ Insufficient free space on the HDD of the SMTP server. Contact the system administrator and check the amount of space remaining on the SMTP server HDD. ▪ Insufficient free space on the HDD where the destination folder is located. Contact the system administrator and check the amount of space remaining on the HDD where the target folder is located. ▪ Insufficient free space on the HDD at the target destination for SMTP direct sending. Contact the system administrator and check the amount of space remaining on the target HDD.

Code	Meaning	Suggested Cause/Action
14-06	User Not Found on SMTP Server (551)	▪ The designated user does not exist. ▪ The designated user does not exist on the SMTP server. ▪ The designated address is not for use with direct SMTP sending.
14-07	Data Send to SMTP Server Failed (4XX)	▪ Failed to access the SMTP server because the transmission failed. ▪ PC not operating correctly. ▪ SMTP server operating incorrectly ▪ Network not operating correctly. ▪ Destination folder setting incorrect. ▪ Direct SMTP sending not operating correctly.
14-08	Data Send to SMTP Server Failed (5XX)	▪ Failed to access the SMTP server because the transmission failed. ▪ SMTP server operating incorrectly ▪ Destination folder setting incorrect. ▪ Direct SMTP sending not operating correctly. ▪ Software application error.
14-09	Authorization Failed for Sending to SMTP Server	▪ POP-Before-SMTP or SMTP authorization failed. ▪ Incorrect setting for file transfer
14-10	Addresses Exceeded	▪ Number of broadcast addresses exceeded the limit for the SMTP server.
14-11	Buffer Full	▪ The send buffer is full so the transmission could not be completed. Buffer is full due to using Scan-to-Email while the buffer is being used send mail at the same time.
14-12	Data Size Too Large	▪ Transmission was cancelled because the detected size of the file was too large.
14-13	Send Cancelled	▪ Processing is interrupted because the user pressed Stop.

Code	Meaning	Suggested Cause/Action
14-14	Security Locked File Error	▪ Update the software because of the defective software.
14-15	Mail Data Error	▪ The transmitting a mail is interrupted via DCS due to the incorrect data. ▪ Update the software because of the defective software.
14-16	Maximum Division Number Error	▪ When a mail is divided for the mail transmission and the division number of a mail are more than the specified number, the mail transmission is interrupted. ▪ Update the software because of the defective software.
14-17	Incorrect Ticket	▪ Update the software because of the defective software.
14-18	Access to MCS File Error	▪ The access to MCS file is denied due to the no permission of access. ▪ Update the software because of the defective software.
14-30	MCS File Creation Failed	Failed to create the MCS file because: ▪ The number of files created with other applications on the Document Server has exceeded the limit. ▪ HDD is full or not operating correctly. ▪ Software error.
14-31	UFS File Creation Failed	UFS file could not be created: ▪ Not enough space in UFS area to handle both Scan-to-Email and IFAX transmission. ▪ HDD full or not operating correctly. ▪ Software error.
14-32	Cancelled the Mail Due to Error Detected by NFAX	▪ Error detected with NFAX and send was cancelled due to a software error.

Code	Meaning	Suggested Cause/Action
14-33	No Mail Address For the Machine	▪ Neither the mail address of the machine nor the mail address of the network administrator is registered.
14-34	Address designated in the domain for SMTP sending does not exist	▪ Operational error in normal mail sending or direct SMTP sending. ▪ Check the address selected in the address book for SMTP sending. ▪ Check the domain selection.
14-50	Mail Job Task Error	Due to an FCU mail job task error, the send was cancelled: ▪ Address book was being edited during creation of the notification mail. ▪ Software error.
14-51	UCS Destination Download Error	Not even one return notification can be downloaded: ▪ The address book was being edited. ▪ The number for the specified destination does not exist (it was deleted or edited after the job was created).
14-60	Send Cancel Failed	▪ The cancel operation by the user failed to cancel the send operation.
14-61	Notification Mail Send Failed for All Destinations	▪ All addresses for return notification mail failed.
14-62	Transmission Error due to the existence of zero line page	▪ When the 0 line page exists in received pages with G3 communication, the transmission is interrupted.
15-01	POP3/IMAP4 Server Not Registered	▪ At startup, the system detected that the IP address of the POP3/IMAP4 server has not been registered in the machine.
15-02	POP3/IMAP4 Mail Account Information Not Registered	▪ The POP3/IMAP4 mail account has not been registered.

Code	Meaning	Suggested Cause/Action
15-03	Mail Address Not Registered	▪ The mail address has not been registered.
15-10	DCS Mail Receive Error	▪ Error other than 15-11 to 15-18.
15-11	Connection Error	The DNS or POP3/IMAP4 server could not be found: ▪ The IP address for DNS or POP3/IMAP4 server is not stored in the machine. ▪ The DNS IP address is not registered. ▪ Network not operating correctly.
15-12	Authorization Error	POP3/IMAP4 send authorization failed: ▪ Incorrect IFAX user name or password. ▪ Access was attempted by another device, such as the PC. ▪ POP3/IMAP4 settings incorrect.
15-13	Receive Buffer Full	▪ Occurs only during manual reception. Transmission cannot be received due to insufficient buffer space. The buffer is being used for mail send or Scan-to-Email.
15-14	Mail Header Format Error	▪ The mail header is not standard format. For example, the Date line description is incorrect.
15-15	Mail Divide Error	▪ The e-mail is not in standard format. There is no boundary between parts of the e-mail, including the header.
15-16	Mail Size Receive Error	▪ The mail cannot be received because it is too large.
15-17	Receive Timeout	▪ May occur during manual receiving only because the network is not operating correctly.
15-18	Incomplete Mail Received	▪ Only one portion of the mail was received.
15-31	Final Destination for Transfer Request Reception Format Error	▪ The format of the final destination for the transfer request was incorrect.

Code	Meaning	Suggested Cause/Action
15-39	Send/Delivery Destination Error	The transmission cannot be delivered to the final destination: ▪ Destination file format is incorrect. ▪ Could not create the destination for the file transmission.
15-41	SMTP Receive Error	▪ Reception rejected because the transaction exceeded the limit for the "Auth. E-mail RX" setting.
15-42	Off Ramp Gateway Error	▪ The delivery destination address was specified with Off Ramp Gateway OFF.
15-43	Address Format Error	▪ Format error in the address of the Off Ramp Gateway.
15-44	Addresses Over	▪ The number of addresses for the Off Ramp Gateway exceeded the limit of 30.
15-61	Attachment File Format Error	▪ The attached file is not TIFF format.
15-62	TIFF File Compatibility Error	Could not receive transmission due to: ▪ Resolution error ▪ Image of resolution greater than 200 dpi without extended memory. ▪ Resolution is not supported. ▪ Page size error ▪ The page size was larger than A3. ▪ Compression error ▪ File was compressed with other than MH, MR, or MMR.
15-63	TIFF Parameter Error	The TIFF file sent as the attachment could not be received because the TIFF header is incorrect: ▪ The TIFF file attachment is a type not supported. ▪ The TIFF file attachment is corrupted. ▪ Software error.

Code	Meaning	Suggested Cause/Action
15-64	TIFF Decompression Error	The file received as an attachment caused the TIFF decompression error: ▪ The TIFF format of the attachment is corrupted. ▪ Software error.
15-71	Not Binary Image Data	▪ The file could not be received because the attachment was not binary image data.
15-73	MDN Status Error	▪ Could not find the Disposition line in the header of the Return Receipt, or there is a problem with the firmware.
15-74	MDN Message ID Error	▪ Could not find the Original Message ID line in the header of the Return Receipt, or there is a problem with the firmware.
15-80	Mail Job Task Read Error	▪ Could not receive the transmission because the destination buffer is full and the destination could not be created (this error may occur when receiving a transfer request or a request for notification of reception).
15-81	Repeated Destination Registration Error	▪ Could not repeat receive the transmission because the destination buffer is full and the destination could not be created (this error may occur when receiving a transfer request or a request for notification of reception).
15-91	Send Registration Error	Could not receive the file for transfer to the final destination: ▪ The format of the final destination or the transfer destination is incorrect. ▪ Destinations are full so the final and transfer destinations could not be created.
15-92	Memory Overflow	▪ Transmission could not be received because memory overflowed during the transaction.

Code	Meaning	Suggested Cause/Action
15-93	Memory Access Error	▪ Transaction could not complete due to a malfunction of SAF memory.
15-94	Incorrect ID Code	▪ The machine rejected an incoming e-mail for transfer request, because the ID code in the incoming e-mail did not match the ID code registered in the machine.
15-95	Transfer Station Function	▪ The machine rejected an incoming e-mail for transfer because the transfer function was unavailable.
22-00	Original length exceeded the maximum scan length	▪ Divide the original into more than one page. ▪ Check the resolution used for scanning. Lower the scan resolution if possible. ▪ Add optional page memory.
22-01	Memory overflow while receiving	▪ Wait for the files in the queue to be sent. ▪ Delete unnecessary files from memory. ▪ Transfer the substitute reception files to an another fax machine, if the machine's printer is busy or out of order. ▪ Add an optional SAF memory card or hard disk.
22-02	Tx or rx job stalled due to line disconnection at the other end	▪ The job started normally but did not finish normally; data may or may not have been received fully. ▪ Restart the machine.
22-04	The machine cannot store received data in the SAF	▪ Update the ROM ▪ Replace the FCU.
22-05	No G3 parameter confirmation answer	▪ Defective FCU board or firmware.
23-00	Data read timeout during construction	▪ Restart the machine. ▪ Replace the FCU.

Code	Meaning	Suggested Cause/Action
25-00	The machine software resets itself after a fatal transmission error occurred	▪ Update the ROM ▪ Replace the FCU.
F0-xx	V.34 modem error	▪ Replace the FCU.
F6-xx	SG3 modem error	▪ Update the SG3 modem ROM. ▪ Replace the SG3 board. ▪ Check for line noise or other line problems. ▪ Try communicating another V.8/V.34 fax.

3.2 IFAX TROUBLESHOOTING

Use the following procedures to determine whether the machine or another part of the network is causing the problem.

Communication Route	Item	Action [Remarks]
General LAN	1. Connection with the LAN	▪ Check that the LAN cable is connected to the machine. ▪ Check that the LEDs on the hub are lit.
	2. LAN activity	Check that other devices connected to the LAN can communicate through the LAN.
Between IFAX and PC	1. Network settings on the PC	▪ Check the network settings on the PC. [Is the IP address registered in the TCP/IP properties in the network setup correct? Check the IP address with the administrator of the network.]
	2. Check that PC can connect with the machine	▪ Use the "ping" command on the PC to contact the machine. [At the MS-DOS prompt, type ping then the IP address of the machine, then press Enter.]
	3. LAN settings in the machine	▪ Check the LAN parameters ▪ Check if there is an IP address conflict with other PCs. [Use the "Network" function in the User Tools. If there is an IP address conflict, inform the administrator.]

Communication Route	Item	Action [Remarks]
Between machine and e-mail server	1. LAN settings in the machine	▪ Check the LAN parameters ▪ Check if there is an IP address conflict with other PCs. [Use the "Network" function in the User Tools. If there is an IP address conflict, inform the administrator.]
	2. E-mail account on the server	▪ Make sure that the machine can log into the e-mail server. ▪ Check that the account and password stored in the server are the same as in the machine. [Ask the administrator to check.]
	3. E-mail server	▪ Make sure that the client devices which have an account in the server can send/receive e-mail. [Ask the administrator to check. Send a test e-mail with the machine's own number as the destination. The machine receives the returned e-mail if the communication is performed successfully.]

Communication Route	Item	Action [Remarks]
Between e-mail server and internet	1. E-mail account on the Server	▪ Make sure that the PC can log into the e-mail server. ▪ Check that the account and password stored in the server are the same as in the machine. [Ask the administrator to check.]
	2. E-mail server	▪ Make sure that the client devices which have an account in the server can send/receive e-mail. [Ask the administrator to check. Send a test e-mail with the machine's own number as the destination. The machine receives the returned e-mail if the communication is performed successfully.]
	3. Destination e-mail address	▪ Make sure that the e-mail address is actually used. ▪ Check that the e-mail address contains no incorrect characters such as spaces.
	4. Router settings	▪ Use the "ping" command to contact the router. ▪ Check that other devices connected to the router can sent data over the router. [Ask the administrator of the server to check.]
	5. Error message by e-mail from the network of the destination.	▪ Check whether e-mail can be sent to another address on the same network, using the application e-mail software. ▪ Check the error e-mail message. [Inform the administrator of the LAN.]

3.3 IP-FAX TROUBLESHOOTING

3.3.1 IP-FAX TRANSMISSION

Cannot send by IP Address/Host Name

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	Specified IP address/host name correct?	Check the IP address/host name.
3	Firewall/NAT is installed?	Cannot breach the firewall. Send by using another method (Fax, Internet Fax)
4	Transmission sent manually?	Manual sending not supported.
5	IP address of local machine registered?	Register the IP address.
6	Remote terminal port number setting other than 1720?	Send by specifying the port number.
7	Specified port number correct?	Confirm the port number of the remote fax.
8	DNS server registered when host name specified?	Contact the network administrator.
9	Remote fax a T.38 terminal?	Check whether the remote fax is a T38 terminal.
10	Remote fax switched off or busy?	Check that the remote fax is switched on.

Check Point		Action
11	Network bandwidth too narrow?	Request the network administrator to increase the bandwidth.
		Raise the delay level. IPFAX SW 01 Bit 0 to 3
		IP-Fax bandwidth is the same as the DCS speed. Set IP-Fax SW00 Bit 6 to 1.
12	Remote fax cancelled transmission?	Check whether the remote fax cancelled the transmission.

Cannot send via VoIP Gateway

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	VoIP Gateway T.38 standard?	Contact the network administrator.
3	VoIP Gateway installed correctly?	Contact the network administrator.
4	VoIP Gateway power switched on?	Contact the network administrator.
5	Is the IP address/host name of the specified Gateway correct?	Check the IP address/host name.
6	Number of the specified fax correct?	Check the remote fax number.
7	Firewall/NAT is installed?	Cannot breach the firewall. Send by using another method (Fax, Internet Fax)
8	Transmission sent manually?	Manual sending not supported.
9	IP address of local fax registered?	Register the IP address.
10	DNS registered when host name specified?	Contact the network administrator.

11	Remote fax a G3 fax?	Check that the remote fax is a G3 fax.
12	G3 fax is connected to VoIP gateway?	Check that G3 fax is connected.
13	Remote G3 fax turned on?	Check that G3 fax is switched on.
14	Network bandwidth too narrow?	Request the network administrator to increase the bandwidth.
		Raise the network delay level. IPFAX SW 01 Bit 0 to 3
		IP-Fax bandwidth is the same as the DCS speed. Set IP-Fax SW00 Bit 6 to 1.

Cannot send by Alias Fax number.

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	Number of specified Alias fax correct?	Confirm the Alias of the remote fax. Error Code: 13-14
3	Firewall/NAT installed?	Cannot breach the firewall. Send by using another method (Fax, Internet Fax)
4	Transmission sent manually?	Manual sending not supported.
5	Gatekeeper installed correctly?	Contact the network administrator.
6	Gatekeeper power switched on?	Contact the network administrator.
7	IP address/host name of Gatekeeper correct?	Check the IP address/host name.
8	DNS server registered when Gatekeeper host name specified?	Contact the network administrator.
9	Enable H.323 SW is set to on?	Check the settings. See User Parameter SW 34 Bit 0

10	IP address of local fax registered?	Register the IP address of the local fax.
11	Alias number of local fax registered?	Register the Alias number of the local fax.
12	Remote fax registered in Gatekeeper?	Contact the network administrator.
13	Remote fax a T.38 terminal?	Check whether the remote fax is a T38 terminal.
14	Remote fax switched off or busy?	Contact the network administrator.
15	Network bandwidth too narrow?	Request the system administrator to increase the bandwidth.
		Raise the delay level. IPFAX SW 01 Bit 0 to 3
		Lower the modem transmission baud rate. IPFAX SW 05
16	Remote fax cancelled transmission?	Check whether the remote fax cancelled the transmission.

3.3.2 IP-FAX RECEPTION

Cannot receive via IP Address/Host Name.

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	Firewall/NAT is installed?	Cannot breach the firewall. Send by using another method (Fax, Internet Fax)
3	IP address of local fax registered?	Register the IP address.
4	Port number specified at remote sender fax (if required)?	Request the sender to specify the port number.
5	Specified port number correct (if required)?	Request the sender to check the port number.
6	DNS server registered when host name specified on sender side?	Contact the network administrator. Note ▪ The sender machine displays this error code if the sender fax is a Ricoh model.
7	Network bandwidth too narrow?	Request the system administrator to increase the bandwidth.
		Lower the start modem reception baud rate on the receiving side. IPFAX SW06
8	Remote fax cancelled transmission?	Check whether the remote fax cancelled the transmission.

Cannot receive by VoIP Gateway.

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	Firewall/NAT is installed?	Cannot breach the firewall. Request the remote fax to send by using another method (Fax, Internet Fax)
3	VoIP Gateway installed correctly?	Contact the network administrator.
4	VoIP Gateway power switched on?	Contact the network administrator.
5	IP address/host name of specified VoIP Gateway correct on sender's side?	Request the remote fax to check the IP address/host name.
6	DNS server registered when host name specified on sender side?	Contact the network administrator.
7	Network bandwidth too narrow?	Request the network administrator to increase the bandwidth.
8	G3 fax connected?	Check that G3 fax is connected.
9	G3 fax power switched on?	Check that G3 fax is switched on.

Cannot receive by Alias Fax number.

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	Firewall/NAT is installed?	Cannot the breach firewall. Request the remote fax to send by using another method (Fax, Internet Fax)
3	Gatekeeper installed correctly?	Contact the network administrator. Note ▪ The sender machine displays this error code when the sender fax is a Ricoh model.
4	Power to Gatekeeper switched on?	Contact the network administrator. Note ▪ The sender machine displays this error code when the sender fax is a Ricoh model.
5	IP address/host name of Gatekeeper correct on the sender's side?	Request the sender to check the IP address/host name. Note ▪ The sender machine displays this error code when the sender fax is a Ricoh model.
6	DNS server registered when Gatekeeper host name specified on sender's side?	Contact the network administrator. Note ▪ The sender machine displays this error code when the sender fax is a Ricoh model.
7	Enable H.323 SW is set to on?	Request the sender to check the settings. User Parameter SW 34 Bit 0 Note ▪ Only if the remote sender fax is a Ricoh fax.

8	Local fax IP address registered?	Register the IP address.
9	Local fax Alias number registered?	Register the Alias number.
10	Network bandwidth too narrow?	Request the system administrator to increase the bandwidth.
		Lower the start modem reception baud rate on the receiving side. IPFAX SW06
11	Remote fax cancelled transmission?	Check whether the remote fax cancelled the transmission.
12	Local fax registered in Gatekeeper?	Contact the network administrator. Note ▪ The sender machine displays this error code when the sender fax is a Ricoh model.

4. SERVICE TABLE

4.1 BEFOREHAND

CAUTION

- Never turn off the main power switch when the power LED is lit or flashing. To avoid damaging the hard disk or memory, press the operation power switch to switch the power off, wait for the power LED to go off, and then switch the main power switch off.

Note

- The main power LED lights or flashes while the platen cover or ARDF is open, while the main machine is communicating with a facsimile or the network server, or while the machine is accessing the hard disk or memory for reading or writing data.

4.2 SERVICE TABLES

4.2.1 SP1-XXX (BIT SWITCHES)

☛ Bit Switches

1	Mode No.		Function
101	System Switch		
	001 – 032	00 – 1F	Change the bit switches for system settings for the fax option. ☛ "Bit Switches"
102	Ifax Switch		
	001 – 016	00 – 0F	Change the bit switches for internet fax settings for the fax option. ☛ "Bit Switches"
103	Printer Switch		
	001 – 016	00 – 0F	Change the bit switches for printer settings for the fax option. ☛ "Bit Switches"
104	Communication Switch		
	001 – 032	00 – 1F	Change the bit switches for communication settings for the fax option. ☛ "Bit Switches"
105	G3-1 Switch		
	001 – 016	00 – 0F	Change the bit switches for the protocol settings of the standard G3 board. ☛ "Bit Switches"
111	IP fax Switch		
	001 – 016	00 – 0F	Change the bit switches for optional IP fax parameters. ☛ "Bit Switches"

4.2.2 SP2-XXX (RAM DATA)

2	Mode No.		Function
101	RAM Read/Write		
	001		Change RAM data for the fax board directly. ☛ "Service RAM Addresses"
102	Memory Dump		
	001	G3-1 Memory Dump	Print out RAM data for the fax board. ☛ "Service RAM Addresses"
103	G3-1 NCU Parameters		
	001 – 023	CC, 01 – 22	NCU parameter settings for the standard G3 board. ☛ "NCU Parameters"

4.2.3 SP3-XXX (TEL LINE SETTINGS)

3	Mode No.		Function
101	Service Station		
	001	Fax Number	Enter the fax number of the service station.
102	Serial Number		
	000		Enter the fax unit's serial number.
103	PSTN-1 Port Settings		
	001	Select Line	Select the line type setting for the G3-1 line. If the machine is installed on a PABX line, select "PABX", "PABX(GND)" or "PABX(FLASH)".
	002	PSTN Access Number	Enter the PSTN access number for the G3-1 line.
	003	Memory Lock Disabled	Not used
107	IPFAX Port Settings		
	001	H323 Port	Sets the H323 port number.
	002	SIP Port	Sets the SIP port number.
	003	RAS Port	Sets the RAS port number.
	004	Gatekeeper port	Sets the Gatekeeper port number.
	005	T.38 Port	Sets the T.38 port number.
	006	SIP Server Port	Sets the SIP port number.
	007	IPFAX Protocol Priority	Select "H323" or "SIP".
201	FAX SW		
	001 – 032	00 – 1F	

4.2.4 SP4-XXX (ROM VERSIONS)

4	Mode No.		Function
101	001	FCU ROM Version	Displays the FCU ROM version.
102	001	Error Codes	Displays the latest 64 fax error codes.
103	001	G3-1 ROM Version	Displays the G3-1 modem version.

4.2.5 SP5-XXX (INITIALIZING)

5	Mode No.	Function
101	Initialize SRAM (except Secure)	
	000	Initializes the bit switches and user parameters, user data in the SRAM, files in the SAF memory, and clock.
102	Erase All Files	
	000	Erases all files stored in the SAF memory.
103	Reset Bit Switches (except Secure)	
	000	Resets the bit switches and user parameters.
104	Factory setting	
	000	Resets the bit switches and user parameters, user data in the SRAM and files in the SAF memory.
105	Initialize All Bit Switches	
	000	Initializes all the current bit switch settings.
106	Initialize Security Bit Switches	
	000	Initializes only the security bit switches. If you select automatic output/display for the user parameter switches, the security settings are initialized.

4.2.6 SP6-XXX (REPORTS)

6	Mode No.		Function
101	System Parameter List		
	000	-	Touch the "ON" button to print the system parameter list.
102	Service Monitor Report		
	000	-	Touch the "ON" button to print the service monitor report.
103	G3 Protocol Dump List		
	001	G3 All Communications	Prints the protocol dump list of all communications for all G3 lines.
	002	G3-1 (All Communications)	Prints the protocol dump list of all communications for the G3-1 line.
	003	G3-1 (1 Communication)	Prints the protocol dump list of the last communication for the G3-1 line.
105	All Files print out		
	000	-	Prints out all the user files in the SAF memory, including confidential messages. Note ▪ Do not use this function, unless the customer is having trouble printing confidential messages or recovering files stored using the memory lock feature.
106	Journal Print out		
	001	All Journals	The machine prints all the communication records on the report.
	002	Specified Date	The machine prints all communication records after the specified date.

107	Log List Print out		
	001	All log files	These log print out functions are for designer use only.
	002	Printer	
	003	SC/TRAP Stored	
	004	Decompression	
	005	Scanner	
	006	JOB/SAF	
	007	Reconstruction	
	008	JBIG	
	009	Fax Driver	
	010	G3CCU	
	011	Fax Job	
	012	CCU	
	013	Scanner Condition	
108	IP Protocol Dump List		
	001	All Communications	Prints the protocol dump list of all communications for the IP fax line.
	002	1 Communication	Prints the protocol dump list of the last communication for the IP fax line.

4.2.7 SP7-XXX (TESTS)

These are the test modes for PTT approval.

7	Function
101	G3-1 Modem Tests
102	G3-1 DTMF Tests
103	Ringer Test
104	G3-1 V34 (S2400baud)
105	G3-1 V34 (S2800baud)
106	G3-1 V34 (S3000baud)
107	G3-1 V34 (S3200baud)
108	G3-1 V34 (S3429baud)
109	Recorded Message Test

4.3 BIT SWITCHES

WARNING

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Note

- Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

4.3.1 SYSTEM SWITCHES

System Switch 00 [SP No. 1-101-001]		
No	**FUNCTION**	**COMMENTS**
0	Dedicated transmission parameter programming 0: Disabled, 1: Enabled	Set this bit to 1 before changing any dedicated transmission parameters. This setting is automatically reset to "0" after turning off and on.
1	**Not used**	Do not change
2	Technical data printout on the Journal 0: Disabled 1: Enabled	1: Instead of the personal name, the following data are listed on the Journal for each G3 communication.

	e.g. 0000 (1) // 32 (2) V34 (3) // 288 (4) // 264 (5) // L0100 (6) 03 (7) 04 (8) (1): EQM value (Line quality data). A larger number means more errors. (2): Symbol rate (V.34 only) (3): Final modem type used (4): Starting data rate (for example, 288 means 28.8 kbps) (5): Final data rate (6): Rx revel (refer to the note after this table for how to read the rx level) (7): Total number of error lines that occurred during non-ECM reception. (8): Total number of burst error lines that occurred during non-ECM reception. Note ▪ EQM and rx level are fixed at "FFFF" in tx mode. ▪ The seventh and eighth numbers are fixed at "00" for transmission records and ECM reception records.	
	Rx level calculation Example: 0000 // 32 V34 // 288/264 // L 01 00 03 04 The four-digit hexadecimal value (N) after "L" indicates the rx level. The high byte is given first, followed by the low byte. Divide the decimal value of N by -16 to get the rx level. In the above example, the decimal value of N (= 0100 [H]) is 256. So, the actual rx level is 256/-16 = -16 dB	
3	**Not used**	Do not change this setting.
4	Line error mark print 0: OFF, 1: ON (print)	When "1" is selected, a line error mark is printed on the printout if a line error occurs during reception. This shows an error position in ECM off mode.
5	G3 communication parameter display 0: Disabled 1: Enabled	This is a fault-finding aid. The LCD shows the key parameters (see "G3 Communication Parameters" below this table). This is normally disabled because it cancels the CSI display for the user. Be sure to reset this bit to 0 after testing.

6	Protocol dump list output after each communication 0: Off 1: On	This is only used for communication troubleshooting. It shows the content of the transmitted facsimile protocol signals. Always reset this bit to 0 after finishing testing. If system switch 09 bit 6 is at "1", the list is only printed if there was an error during the communication.
7	Not used	Do not change the setting.

System Switch 01 - Not used (Do not change the factory settings.)

System Switch 02 [SP No. 1-101-003]

No	FUNCTION	COMMENTS
0-1	**Not used**	Do not change these settings.
2	Force after transmission stall 0: Off 1: On	With this setting on, the machine resets itself automatically if a transmission stalls and fails to complete the job.
3	**Not used**	Do not change these settings.
4	File retention time 0: Depends on User Parameter 24 [18(H)] 1: No limit (until the year 2126)	1: A file that had a communication error will not be erased unless the communication is successful.
5	**Not used**	Do not change this setting.

6-7	Memory read/write by RDS Bit 7: 0, Bit 6: 0 Always disabled Bit 7: 0, Bit 6: 1 User selectable Bit 7: 1, Bit 6: 0 User selectable Bit 7: 1, Bit 6: 1 Always enabled	(0,0): All RDS systems are always locked out. (0,1), (1,0): Normally, RDS systems are locked out, but the user can temporarily switch RDS on to allow RDS operations to take place. RDS will automatically be locked out again after a certain time, which is stored in System Switch 03. Note that if an RDS operation takes place, RDS will not switch off until this time limit has expired. (1,1): At any time, an RDS system can access the machine.

System Switch 03 [SP No. 1-101-004]		
No	**FUNCTION**	**COMMENTS**
0-7	Length of time that RDS is temporarily switched on when bits 6 and 7 of System Switch 02 are set to "User selectable"	00 - 99 hours (BCD). This setting is only valid if bits 6 and 7 of System Switch 02 are set to "User selectable". The default setting is 24 hours.

System Switch 04 [SP No. 1-101-005]		
No	**FUNCTION**	**COMMENTS**
0-2	**Not used**	Do not change these settings.
3	Printing dedicated tx parameters on Quick/Speed Dial Lists 0: Disabled 1: Enabled	1: Each Quick/Speed dial number on the list is printed with the dedicated tx parameters.
4-7	**Not used**	Do not change these settings.

System Switch 05 - Not used (Do not change the factory settings.)
System Switch 06 - Not used (Do not change the factory settings.)
System Switch 07 - Not used (Do not change the factory settings.)

System Switch 08 - Not used (Do not change the factory settings.)

System Switch 09 [SP No. 1-101-010]		
No	**FUNCTION**	**COMMENTS**
0	Addition of image data from confidential transmissions on the transmission result report 0: Disabled 1: Enabled	If this feature is enabled, the top half of the first page of confidential messages will be printed on transmission result reports.
1	Print timing of communication reports on the Journal when no image data was exchanged. 0: After DCS/NSS communication (default), 1: After polling	0: Journal is printed only when image data is sent. 1: Journal is printed when any data is sent.
2	Automatic error report printout 0: Disabled 1: Enabled	0: Error reports will not be printed. 1: Error reports will be printed automatically after failed communications.
3	Printing of the error code on the error report 0: No 1: Yes	1: Error codes are printed on the error reports. This can be used for detecting an error which rarely occurs.
4	**Not used**	Do not change this setting.
5	Power failure report 0: Disabled 1: Enabled	1: A power failure report will be automatically printed after the power is switched on if a fax message disappeared from the memory when the power was turned off last. **NOTE:** If "0" is selected, no reports are printed and no one may recognize that fax data is gone due to a power failure.

6	Conditions for printing the protocol dump list 0: Print for all communications 1: Print only when there is a communication error	This switch becomes effective only when system switch 00 bit 6 is set to 1. 1: Set this bit to 1 when you wish to print a protocol dump list only for communications with errors. **NOTE:** The memory size is limited. Use this bit switch only when some log reports are necessary.
7	Priority given to various types of remote terminal ID when printing reports 0: RTI > CSI > Dial label > Tel. Number 1: Dial label > Tel. number > RTI > CSI	This bit determines which set of priorities the machine uses when listing remote terminal names on reports. Dial Label: The name stored, by the user, for the Quick/Speed Dial number.

System Switch 0A [SP No. 1-101-011]

No	FUNCTION	COMMENTS
0	Automatic port selection 0: Disabled, 1: Enabled	When "1" is selected, a suitable port is automatically selected if the selected port is not used. **NOTE:** This bit is useful if all communication lines at a customer site are not same quality.
1-3	**Not used**	Do not change these settings.
4	Dialing on the ten-key pad when the external telephone is off-hook 0: Disabled 1: Enabled	0: Prevents dialing from the ten-key pad while the external telephone is off-hook. Use this setting when the external telephone is not by the machine, or if a wireless telephone is connected as an external telephone. 1: The user can dial on the machine's ten-key pad when the handset is off-hook.
5	On hook dial 0: Disabled 1: Enabled	0: On hook dial is disabled.
6-7	**Not used**	Do not change the factory settings

System Switch 0B - Not used (Do not change the factory settings.)
System Switch 0C - Not used (Do not change the factory settings.)
System Switch 0D - Not used (Do not change the factory settings.)

System Switch 0E [SP No. 1-101-015]		
No	**FUNCTION**	**COMMENTS**
0-1	**Not used**	Do not change the settings.
2	Enable/disable for direct sending selection 0: Direct sending off 1: Direct sending on	Direct sending cannot operate when the capture function is on during sending. Setting this switch to "1" enables direct sending without capture. Setting this switch to "0" masks the direct sending function on the operation panel so direct sending with ScanRouter cannot be selected.
3	Action when the external handset goes off-hook 0: Manual tx and rx operation 1: Memory tx and rx operation (the display remains the same)	0: Manual tx and rx are possible while the external handset is off-hook. However, memory tx is not possible. 1: The display stays in standby mode even when the external handset is used, so that other people can use the machine for memory tx operation. Note that manual tx and rx are not possible with this setting.
4-7	**Not used**	Do not change these settings.

<table>
<tr><th colspan="4">System Switch 0F [SP No. 1-101-016]</th></tr>
<tr><td>No</td><td colspan="2">FUNCTION</td><td>COMMENTS</td></tr>
<tr><td rowspan="9">0-7</td><td colspan="2">Country/area code for functional settings (Hex)</td><td rowspan="9">This country/area code determines the factory settings of bit switches and RAM addresses. However, it has no effect on the NCU parameter settings and communication parameter RAM addresses.
Cross reference
NCU country code:
SP No. 2-103-001 for G3-1
SP No. 2-104-001 for G3-2
SP No. 2-105-001 for G3-3</td></tr>
<tr><td>00: France</td><td>11: USA</td></tr>
<tr><td>01: Germany</td><td>12: Asia</td></tr>
<tr><td>02: UK</td><td>12: Asia</td></tr>
<tr><td>03: Italy</td><td>13: Japan</td></tr>
<tr><td>04: Austria</td><td>14: Hong Kong</td></tr>
<tr><td>05: Belgium</td><td>15: South Africa</td></tr>
<tr><td>06: Denmark</td><td>16: Australia</td></tr>
<tr><td>07: Finland</td><td>17: New Zealand</td></tr>
<tr><td rowspan="12"></td><td>08: Ireland</td><td>18: Singapore</td><td rowspan="12"></td></tr>
<tr><td>09: Norway</td><td>19: Malaysia</td></tr>
<tr><td>0A: Sweden</td><td>1A: China</td></tr>
<tr><td>0B: Switzerland</td><td>1B: Formosa</td></tr>
<tr><td>0C: Portugal</td><td>1C: Korea</td></tr>
<tr><td>0D: Netherland</td><td>20: Turkey</td></tr>
<tr><td>0E: Spain</td><td>21: Greece</td></tr>
<tr><td>0F: Israel</td><td>22: Hungary</td></tr>
<tr><td>10: ---</td><td>23: Czech</td></tr>
<tr><td>11: USA</td><td>24: Poland</td></tr>
</table>

System Switch 10 [SP No. 1-101-017]		
No	**FUNCTION**	**COMMENTS**
0-7	Threshold memory level for parallel memory transmission	Threshold = N x 128 KB + 256 KB N can be between 00 - FF(H) Default setting: 02(H) = 512 KB

System Switch 11 [SP No. 1-101-018]		
No	**FUNCTION**	**COMMENTS**
0	TTI printing position 0: Superimposed on the page data 1: Printed before the data leading edge	Change this bit to 1 if the TTI overprints information that the customer considers to be important (G3 transmissions). **NOTE:** If "1" is selected, it is possible that sent data is printed on two sheets of paper.
1	**Not used**	Japan Only
2	**Not used**	Do not change the factory settings.
3	TTI printing type 0: Address unit 1: File unit	TTI printing unit can be selected.
4-6	**Not used**	Do not change the factory settings.
7	**Not used**	Japan Only

System Switch 12 [SP No. 1-101-019]		
No	**FUNCTION**	**COMMENTS**
0-7	TTI printing position in the main scan direction	TTI: 08 to 92 (BCD) mm Input even numbers only. This setting determines the print start position for the TTI from the left edge of the paper. If the TTI is moved too far to the right, it may overwrite the file number which is on the top right of the page. On an A4 page, if the TTI is moved over by more than 50 mm, it may overwrite the page number.

System Switch 13 - Not used (do not change these settings)
System Switch 14 - Not used (do not change these settings)

System Switch 15 [SP No. 1-101-022]		
No	**FUNCTION**	**COMMENTS**
0	**Not used**	Do not change the settings.
1	Going into the Energy Saver mode automatically 0: Enabled 1: Disabled	1: The machine will restart from the Energy Saver mode quickly, because the +5V power supply is active even in the Energy Saver mode. The LED of the operation switch is flashing instead of entering Energy Saver mode. Use this setting if an external telephone has to be used when the machine is in the Energy Saver mode.
2-3	**Not used**	Do not change these settings.
4-5	Interval for preventing the machine from entering Energy Saver mode if there is a pending transmission file. Bit 5: 0, Bit 4: 0 1 min Bit 5: 0, Bit 4: 1 30 min1 Bit 5: 1, Bit 4: 0 1 hour Bit 5: 1, Bit 4: 1 24 hours	If there is a file waiting for transmission, the machine does not go to Energy Saver mode during the selected period. After transmitting the file, if there is no file waiting for transmission, the machine goes to the Energy Saver mode.
6-7	**Not used**	Do not change

System Switch 16 [SP No. 1-101-023]		
No	**FUNCTION**	**COMMENTS**
0	Parallel Broadcasting 0: Disabled 1: Enabled	1: The machine sends messages simultaneously using all available ports during broadcasting. **NOTE:** If a customer wants to keep a line available for fax reception or other reasons, select "0" (Disable).
1	Priority setting for the G3 line. 0: PSTN-1 > PSTN-2 or 3 1: PSTN-2 or 3 > PSTN-1	This function allows the user to select the default G3 line type. The optional SG3 units are required to use the PSTN-2 or 3 setting.
2-7	**Not used**	Do not change these settings.

System Switch 17 - Not used (do not change these settings)
System Switch 18 - Not used (do not change these settings)

System Switch 19 [SP No. 1-101-026]		
No	**FUNCTION**	**COMMENTS**
0-6	**Not used**	Do not change the settings.
7	Special Original mode 0: Disabled 1: Enabled	1: If the customer frequently wishes to transmit a form or letterhead which has a colored or printed background, change this bit to "1". "Original 1" and "Original 2" can be selected in addition to the "Text", "Text/Photo" and "Photo" modes.

System Switch 1A [SP No. 1-101-027]		
No.	**FUNCTION**	**COMMENTS**
0-7	LS RX memory remaining refresh value setting	Sets a value of 4K. If the amount of memory remaining falls below 4K, documents received in memory are printed to create more space in memory. Initial value: 0x80 (512K) 00-FF (0-1020 KB: Hex) **NOTE:** If a customer wants available memory size larger, decrease this threshold.

System Switch 1B - Not used (do not change these settings)
System Switch 1C - Not used (do not change these settings)

System Switch 1D [SP No. 1-101-030]		
No	**FUNCTION**	**COMMENTS**
0	RTI/CSI/CPS code display 0: ON 1: OFF	0: RTI, CSI, CPS codes are displayed on the top line of the LCD panel during communication. 1: Codes are switched off (no display)
1-7	**Not used**	Do not change these settings.

System Switch 1E [SP No. 1-101-031]		
No	**FUNCTION**	**COMMENTS**
0	Communication after the Journal data storage area has become full 0: Impossible 1: Possible	0: When this switch is on and the journal history becomes full, the next report prints. If the journal history is not deleted, the next transmission cannot be received. This prevents overwriting communication records before the machine can print them. 1: If the buffer memory of the communication records for the Journal is full, fax communications are still possible. But the machine will overwrite the oldest communication records. Note: This setting is effective only when Automatic Journal printout is enabled but the machine cannot print the report (e.g., no paper).
1	Action when the SAF memory has become full during scanning 0: The current page is erased. 1: The entire file is erased.	0: If the SAF memory becomes full during scanning at the memory transmission, the successfully scanned pages are transmitted. 1: If the SAF memory becomes full during scanning at the memory transmission, the file is erased and no pages are transmitted. This bit switch is ignored for parallel memory transmission.
2	RTI/CSI display priority 0: RTI 1: CSI	This bit determines which identifier, RTI or CSI, is displayed on the LCD while the machine is communicating in G3 non-standard mode.
3	File No. printing 0: Enabled 1: Disabled	1: File numbers are not printed on any reports. **NOTE:** The file numbers may not be printed in the sequential order. If a customer does not like this numbering, select "0".

4	Action when authorized reception is enabled but authorized RTIs/CSIs are not yet programmed 0: All fax reception is disabled 1: Faxes can be received if the sender has an RTI or CSI	If authorized reception is enabled but the user has stored no acceptable sender RTIs or CSIs, the machine will not be able to receive any fax messages. If the customer wishes to receive messages from any sender that includes an RTI or CSI, and to block messages from senders that do not include an RTI or CSI, change this bit to "1", then enable Authorized Reception. Otherwise, keep this bit at "0 (default setting)".
5-7	**Not used**	Do not change the settings

System Switch 1F [SP No. 1-101-032]		
No	**FUNCTION**	**COMMENTS**
0	**Not used**	Do not change the settings.
1	Report printout after an original jam during SAF storage or if the SAF memory fills up 0: Enabled 1: Disabled	0: When an original jams, or the SAF memory overflows during scanning, a report will be printed. Change this bit to "1" if the customer does not want to have a report in these cases. Memory tx – Memory storage report Parallel memory tx – Transmission result report
2	**Not used**	Do not change the settings.
3	Received fax print start timing (G3 reception) 0: After receiving each page 1: After receiving all pages	0: The machine prints each page immediately after the machine receives it. 1: The machine prints the complete message after the machine receives all the pages in the memory.
4-6	**Not used**	Do not change the factory settings.

7	Action when a fax SC has occurred 0: Automatic reset 1: Fax unit stops	0: When the fax unit detects a fax SC code other than SC1201 and SC1207, the fax unit automatically resets itself. 1: When the fax unit detects any fax SC code, the fax unit stops. Cross Reference Fax SC codes - See "Troubleshooting"

4.3.2 I-FAX SWITCHES

I-fax Switch 00 [SP No. 1-102-001]		
No	**FUNCTION**	**COMMENTS**
	Original Width of TX Attachment File	This setting sets the maximum size of the original that the destination can receive. (Bits 3~7 are reserved for future use or not used.)
0	A4	0: Off (not selected), 1: On (selected) If more than one of these three bits is set to "1", the larger size has priority. For example, if both Bit 2 and Bit 1 are set to "1" then the maximum size is "A3" (Bit 2).
1	B4	
2	A3	
3-6	Reserved	
7	**Not used**	
	When mail is sent, there is no negotiation with the receiving machine at the destination, so the sending machine cannot make a selection for the receiving capabilities (original width setting) of the receiving machine. The original width selected with this switch is used as the RX machine's original width setting, and the original is reduced to this size before sending. The default is A4. If the width selected with this switch is higher than the receiving machine can accept, the machine detects this and this causes an error.	

I-fax Switch 01 [SP No. 1-102-002]		
No	**FUNCTION**	**COMMENTS**
	Original Line Resolution of TX Attachment File	These settings set the maximum resolution of the original that the destination can receive.
0	200x100 Standard	0: Not selected 1: Selected If more than one of these three bits is set to "1", the higher resolution has priority. For example, if both Bit 0 and Bit 2 are set to "1" then the resolution is set for "Bit 2 200 x 400.
1	200x200 Detail	
2	200x400 Fine	
3	300 x 300 Reserve	
4	400 x 400 Super Fine	
5	600 x 600 Reserve	
6	Reserve	
7	mm/inch	
	This setting selects mm/inch conversion for mail transmission. 0: Off (No conversion), 1: On (Conversion) When on (set to "1"), the machine converts millimeters to inches for sending mail. There is no switch for converting inches to millimeters. Unlike G3 fax transmissions which can negotiate between sender and receiver to determine the setting, mail cannot negotiate between terminals; the mm/inch selection is determined by the sender fax. When this switch is Off (0): Images scanned in inches are sent in inches. Images scanned in mm are sent in mm. Images received in inches are transmitted in inches. Images received in mm are transmitted in mm. When this switch is On (1): Images scanned in inches are sent in inches. Images scanned in mm are converted to inches. Images received in inches are transmitted in inches. Images received in mm are converted to inches.	

I-fax Switch 02 [SP No. 1-102-003]		
No	**FUNCTION**	**COMMENTS**
0	RX Text Mail Header Processing	
	This setting determines whether the header information is printed with text e-mails when they are received. 0: Prints only text mail. 1: Prints mail header information attached to text mail. When a text mail is received with this switch On (1), the "From" address and "Subject" address are printed as header information. When a mail with only binary data is received (a TIFF-F file, for example), this setting is ignored and no header is printed.	
1	Output from Attached Document at E-mail TX Error	
	This setting determines whether only the first page or all pages of an e-mail attachment are printed at the sending station when a transmission error occurs. This allows the customer to see which documents have not reached their intended destinations if sent to the wrong e-mail addresses, for example. 0: Prints 1st page only. 1: Prints all pages.	
2-3	Text String for Return Receipt	
	This setting determines the text string output for the Return Receipt that confirms the transmission was received normally at the destination.	

	00: "Dispatched" Sends from PC mail a request for a Return Receipt. Receives the Return Receipt with "dispatched" in the 2nd part: Disposition: Automatic-action/MDN-send automatically; dispatched The "dispatched" string is included in the Subject string. 01: "Displayed" Sends from PC mail a request for a Return Receipt. Receives the Return Receipt with "displayed" in the 2nd part: Disposition: Automatic-action/MDN-send automatically; displayed The "displayed" string is included in the Subject string. 10: Reserved 11: Reserved A mail requesting a Return Receipt sent from an IFAX with this switch set to "00" (for "dispatched") received by Microsoft Outlook 2000 may cause an error. If any setting other than "displayed" (01) causes a problem, change the setting to "01" to enable normal sending of the Return Receipt.
4	Media accept feature
	This setting adds or does not add the media accept feature to the answer mail to confirm a reception. 0: Does not add the media accept feature to the answer mail 1: Adds the media accept feature to the answer mail. Use this bit switch if a problem occurs when the machine receives an answer mail, which contains the media accept feature field.
5-6	**Not Used**
7	Image Resolution of RX Text Mail
	This setting determines the image resolution of the received mail. 0: 200 x 200 1: 400 x 400 The "1" setting requires installation of the Function Upgrade Card in order to have enough SAF (Store and Forward) memory to receive images at 400 x 400 resolution.

I-fax Switch 03 - Not used (do not change the settings) [SP No. 1-102-004]

I-fax Switch 04 [SP No. 1-102-005]		
No	**FUNCTION**	**COMMENTS**
0	Subject for Delivery TX/Memory Transfer	
	This setting determines whether the RTI/CSI registered on this machine or the RTI/CSI of the originator is used in the subject lines of transferred documents. 0: Puts the RTI/CSI of the originator in the Subject line. If this is used, either the RTI or CSI is used. Only one of these can be received for use in the subject line. 1: Puts the RTI/CSI registered on this machine in the Subject line. When this switch is used to transfer and deliver mail to a PC, the information in the Subject line that indicates where the transmission originated can be used to determine automatically the destination folder for each e-mail.	
1	Subject corresponding to mail post database 0: Standard subject 1: Mail post database subject The standard subject is replaced by the mail post database subject in the following three cases: 1) When the service technician sets the service (software) switch. 2) When memory sending, delivery specified by F code or SMTP reception is done. 3) With relay broadcasting (1st stage without the Schmidt 4 function). Note ▪ This switch does not apply for condition 3) when the RX system is set up for memory sending, delivery by F-code, sending with SMTP RX and when operators are using FOL (to prevent problems when receiving transmissions).	
2-7	**Not Used**	

I-fax Switch 05 [SP No. 1-102-006]		
No	**FUNCTION**	**COMMENTS**
0	Mail Addresses of SMTP Broadcast Recipients	
	Determines whether the e-mail addresses of the destinations that receive transmissions broadcasted using SMTP protocol are recorded in the Journal. For example: "1st destination + Total number of destinations: 9" in the Journal indicates a broadcast to 9 destinations. 0: Not recorded 1: Recorded	
1	I-Fax Automatic Re-dial Setting 0: OFF 1: ON	Determines whether the I-fax automatically redials when an error occurs.
2-7	**Not Used**	

I-fax Switch 06 - Not used (do not change the settings) [SP No. 1-102-007]
I-fax Switch 07 - Not used (do not change the settings) [SP No. 1-102-008]

I-fax Switch 08 [SP No. 1-102-009]		
No	**FUNCTION**	**COMMENTS**
0-7	Memory Threshold for POP Mail Reception	
	This setting determines the amount of SAF (Store and Forward) memory. (SAF stores fax messages to send later for transmission to more than one location, and also holds incoming messages if they cannot be printed.) When the amount of SAF memory available falls below this setting, mail can no longer be received; received mail is then stored on the mail server. 00-FF (0 to 1024 KB: HEX) Note ▪ The hexadecimal number you enter is multiplied by 4 KB to determine the amount of memory.	

I-fax Switch 09 [SP No. 1-102-010]		
No	**FUNCTION**	**COMMENTS**
0-3	**Not used**	Do not change the settings
4-7	Restrict TX Retries	This setting determines the number of retries when connection and transmission fails due to errors. 01-F (1-15 Hex)

I-fax Switch 0A - Not used (do not change the settings) **[SP No. 1-102-011]**
I-fax Switch 0B - Not used (do not change the settings) **[SP No. 1-102-012]**
I-fax Switch 0C - Not used (do not change the settings) **[SP No. 1-102-013]**
I-fax Switch 0D - Not used (do not change the settings) **[SP No. 1-102-014]**
I-fax Switch 0E - Not used (do not change the settings) **[SP No. 1-102-015]**

I-fax Switch 0F [SP No. 1-102-016]		
No	**FUNCTION**	**COMMENTS**
0	Delivery Method for SMTP RX Files	
	This setting determines whether files received with SMTP protocol are delivered or output immediately. 0: Off. Files received via SMTP are output immediately without delivery. 1: On. Files received via SMTP are delivered immediately to their destinations.	
1	Signature for the SMTP	
	This setting determines whether a signature is put on an e-mail via SMTP. 0: No signature 1: Signature	
2	This setting determines whether an e-mail via SMTP is encrypted. 0: Not encrypted 1: Encrypted	
3-7	**Not used**	

4.3.3 PRINTER SWITCHES

Printer Switch 00 [SP No. 1-103-001]		
No	**FUNCTION**	**COMMENTS**
0	Select page separation marks 0: Off 1: On	0: If a 2 page RX transmission is split, [*] is printed in the bottom right corner of the 1st page and only a [2] is printed in the upper right corner of the 2nd page. 1: If a 2 page RX transmission is split into two pages, for example, [*] [2] is printed in the bottom right corner of the 1st page and only a [2] is printed in the upper right corner of the 2nd page. Note ▪ This helps the user to identify pages that have been split because the size of the paper is smaller than the size of the document received. (When A5 is used to print an A4 size document, for example.)
1	Repetition of data when the received page is longer than the printer paper 0: Off 1: On	1: Default. 10 mm of the trailing edge of the previous page are repeated at the top of the next page. 0: The next page continues from where the previous page stopped without any repeated text.
2	Prints the date and time on received fax messages 0: Disabled 1: Enabled	This switch is only effective when user parameter 02 - bit 2 (printing the received date and time on received fax messages) is enabled. 1: The machine prints the received and printed date and time at the bottom of each received page.
3-7	**Not used**	Do not change the settings.

Printer Switch 01 [SP No. 1-103-002]		
No	**FUNCTION**	**COMMENTS**
0-2	**Not used**	Do not change the settings.
3-4	Maximum print width used in the setup protocol Bit 4: 0, Bit 3: 0 = Not used Bit 4: 0, Bit 3: 1 = A3 Bit 4: 1, Bit 3: 0 = B4 Bit 4: 1, Bit 3: 1 = A4	These bits are only effective when bit 7 of printer switch 01 is "1".
5-6	**Not used**	Do not change the settings.
7	Received message width restriction in the protocol signal to the sender 0: Disabled 1: Enabled	0: The machine informs the transmitting machine of the print width depending on the paper size available from the paper feed stations. Refer to the table on the next page for how the machine chooses the paper width used in the setup protocol (NSF/DIS). 1: The machine informs the transmitting machine of the fixed paper width which is specified by bits 3 and 4 above.

<table>
<tr><th colspan="3">Printer Switch 02 [SP No. 1-103-003]</th></tr>
<tr><th>No</th><th>FUNCTION</th><th>COMMENTS</th></tr>
<tr><td>0</td><td>1st paper feed station usage for fax printing
0: Enabled
1: Disabled</td><td rowspan="4">0: The paper feed station can be used to print fax messages and reports.
1: The specified paper feed station will not be used for printing fax messages and reports.
Note
▪ Do not disable usage for a paper feed station which has been specified by User Parameter Switch 0F (15), or which is used for the Specified Cassette Selection feature.</td></tr>
<tr><td>1</td><td>2nd paper feed station usage for fax printing
0: Enabled
1: Disabled</td></tr>
<tr><td>2</td><td>3rd paper feed station usage for fax printing
0: Enabled
1: Disabled</td></tr>
<tr><td>3</td><td>4th paper feed station usage for fax printing
0: Enabled
1: Disabled</td></tr>
<tr><td>4-7</td><td>Not used</td><td>Do not change the settings.</td></tr>
</table>

Printer Switch 03 [SP No. 1-103-004]		
No	**FUNCTION**	**COMMENTS**
0	Length reduction of received data 0: Disabled 1: Enabled	0: Incoming pages are printed without length reduction. (Page separation threshold: Printer Switch 03, bits 4 to 7) 1: Incoming page length is reduced when printing. (Maximum reducible length: Printer Switches 04, bits 0 to 4)
1-3	Not used	Do not change the settings
4-7	Page separation setting when sub scan compression is forbidden 00-0F (0-15 mm: Hex) Default: 6 mm	Page separation threshold (with reduction disabled with switch 03-0 above). For example, if this setting is set to "10", and A4 is the selected paper size: If the received document is 10 mm or less longer than A4, then the 10 mm are cut and only 1 page prints. If the received document is 10 mm longer than A4, then the document is split into 2 pages.

Printer Switch 04
SP No. 1-103-005

<table>
<tr><th>No</th><th>FUNCTION</th><th>COMMENTS</th></tr>
<tr><td rowspan="8">0-4</td><td colspan="2">Maximum reducible length when length reduction is enabled with switch 03-0 above.
<Maximum reducible length> = <Paper length> + (N x 5mm)
"N" is the decimal value of the binary setting of bits 0 to 4.</td></tr>
<tr><td colspan="2"><table>
<tr><th>Bit 4</th><th>Bit 3</th><th>Bit 2</th><th>Bit 1</th><th>Bit 0</th><th>Setting</th></tr>
<tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0 mm</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>5 mm</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td><td>20 mm</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>155 mm</td></tr>
</table></td></tr>
<tr><td colspan="2">For A5 sideways and B5 sideways paper
<Maximum reducible length> = <Paper length> + 0.75 x (N x 5mm)</td></tr>
<tr><td>5-6</td><td colspan="2">Length of the duplicated image on the next page, when page separation has taken place.
Bit 6: 0, Bit 5: 0 = 4 mm
Bit 6: 1, Bit 5: 0 = 10 mm
Bit 6: 0, Bit 5: 1 = 15 mm
Bit 6: 1, Bit 5: 1 = Not used</td></tr>
<tr><td>7</td><td>Not used.</td><td>Do not change the setting.</td></tr>
</table>

Printer Switch 05 - Not used (do not change the settings)

Printer Switch 06 [SP No. 1-103-007]		
No	**FUNCTION**	**COMMENTS**
0	Printing while a paper cassette is pulled out, when the Just Size Printing feature is enabled. 0: Printing will not start 1: Printing will start if another cassette has a suitable size of paper, based on the paper size selection priority tables.	Cross reference Just size printing on/off – User switch 05, bit 5
1-7	**Not used.**	Do not change the settings.

Printer Switch 07 [SP No. 1-103-008]		
No	**FUNCTION**	**COMMENTS**
0-3	**Not used.**	Do not change the settings.
4	List of destinations in the Communication Failure Report for broadcasting 0: All destinations 1: Only destinations where communication failure occurred	1: Only destinations where communication failure occurred are printed on the Communication Failure Report.
5-7	**Not used.**	Do not change the settings.

Printer Switch 08 - Not used (do not change the settings)
Printer Switch 09 - Not used (do not change the settings)
Printer Switch 0A - Not used (do not change the settings)

Printer Switch 0B - Not used (do not change the settings)

Printer Switch 0C - Not used (do not change the settings)
Printer Switch 0D - Not used (do not change the settings)

Printer Switch 0E [SP No. 1-103-015]		
No	**FUNCTION**	**COMMENTS**
0	Paper size selection priority 0: Width 1: Length	0: A paper size that has the same width as the received data is selected first. 1: A paper size which has enough length to print all the received lines without reduction is selected first.
1	Paper size selected for printing A4 width fax data 0: 8.5" x 11" size 1: A4 size	This switch determines which paper size is selected for printing A4 width fax data, when the machine has both A4 and 8.5" x 11" size paper.
2	Page separation 0: Enabled 1: Disabled	1: If all paper sizes in the machine require page separation to print a received fax message, the machine does not print the message (Substitute Reception is used). After a larger size of paper is set in a cassette, the machine automatically prints the fax message.
3-4	Printing the sample image on reports Bit 4: 0, Bit 3: 0 = The upper half only Bit 4: 0, Bit 3: 1 = 50% reduction in sub-scan only Bit 4: 1, Bit 3: 0 = Same size Bit 4: 1, Bit 3: 1 = **Not used**	"Same size" means the sample image is printed at 100%, even if page separation occurs. User Parameter Switch 19 (13H) bit 4 must be set to "0" to enable this switch. Refer to Detailed Section Descriptions for more on this feature.
5-6	**Not used**	Do not change the settings.

7	Equalizing the reduction ratio among separated pages (Page Separation) 0: Enabled 1: Disabled	0: When page separation has taken place, all the pages are reduced with the same reduction ratio. 1: Only the last page is reduced to fit the selected paper size when page separation has taken place. Other pages are printed without reduction.

Printer Switch 0F [SP No. 1-103-016]		
No	**FUNCTION**	**COMMENTS**
0-1	Smoothing feature Bit 1: 0 Bit 0: 0 = Disabled Bit 1: 0 Bit 0: 1 = Disabled Bit 1: 1 Bit 0: 0 = Enabled Bit 1: 1 Bit 0: 1 = **Not used**	(0, 0) (0, 1): Disable smoothing if the machine receives halftone images from other manufacturers fax machines frequently.
2	Duplex printing 0: Disabled 1: Enabled	1: The machine always prints received fax messages in duplex printing mode:
3	Binding direction for Duplex printing 0: Left binding 1: Top binding	0: Sets the binding for the left edge of the stack. 1: Sets the binding for the top of the stack.
4-7	**Not used**	Do not change the settings.

4.3.4 COMMUNICATION SWITCHES

Communication Switch 00 [SP No. 1-104-001]		
No	**FUNCTION**	**COMMENTS**
0-1	Compression modes available in receive mode Bit 1: 0 Bit 0: 0 = MH only Bit 1: 0 Bit 0: 1 = MH/MR Bit 1: 1 Bit 0: 0 = MH/MR/MMR Bit 1: 1 Bit 0: 1 = MH/MR/MMR/JBIG	These bits determine the compression capabilities to be declared in phase B (handshaking) of the T.30 protocol.
2-3	Compression modes available in transmit mode Bit 3: 0 Bit 2: 0 = MH only Bit 3: 0 Bit 2: 1 = MH/MR Bit 3: 1 Bit 2: 0 = MH/MR/MMR Bit 3: 1 Bit 2: 1 = MH/MR/MMR/JBIG	These bits determine the compression capabilities to be used in the transmission and to be declared in phase B (handshaking) of the T.30 protocol.
4	**Not used**	Do not change the settings.
5	JBIG compression method: Reception 0: Only basic supported 1: Basic and optional both supported	Change the setting when communication problems occur using JBIG compression.
6	JBIG compression method: Transmission 0: Basic mode priority 1: Optional mode priority	Change the setting when communication problems occur using JBIG compression.
7	**Not used**	Do not change the settings.

Communication Switch 01 [SP No. 1-104-002]		
No	**FUNCTION**	**COMMENTS**
0	ECM 0: Off 1: On	If this bit is set to 0, ECM is switched off for all communications. In addition, V.8 protocol and JBIG compression are switched off automatically.
1	**Not used**	Do not change the settings.
2-3	Wrong connection prevention method Bit 3: 0, Bit 2: 0 = None Bit 3: 0, Bit 2: 1 = 8 digit CSI Bit 3: 1, Bit 2: 0 = 4 digit CSI Bit 3: 1, Bit 2: 1 = CSI/RTI	(0,1) - The machine will disconnect the line without sending a fax message, if the last 8 digits of the received CSI do not match the last 8 digits of the dialed telephone number. This does not work when manually dialed. (1,0) - The same as above, except that only the last 4 digits are compared. (1,1) - The machine will disconnect the line without sending a fax message, if the other end does not identify itself with an RTI or CSI. (0,0) - Nothing is checked; transmission will always go ahead. Note ▪ This function does not work when dialing is done from the external telephone.
4-5	**Not used**	Do not change the setting.
6-7	Maximum printable page length available Bit 7: 0 Bit 6: 0 = No limit Bit 7: 0 Bit 6: 1 = B4 (364 mm) Bit 7: 1 Bit 6: 0 = A4 (297 mm) Bit 7: 1 Bit 6: 1 = **Not used**	The setting determined by these bits is informed to the transmitting terminal in the pre-message protocol exchange (in the DIS/NSF frames).

Communication Switch 02 [SP No. 1-104-003]			
No	**FUNCTION**	**COMMENTS**	
0	G3 Burst error threshold 0: Low 1: High	If there are more consecutive error lines in the received page than the threshold, the machine will send a negative response. The Low and High threshold values depend on the sub-scan resolution, and are as follows.	
		100 dpi	6(L) → 12(H)
		200 dpi	12(L) → 24(H)
		300 dpi	18(L) → 36(H)
		400 dpi	24(L) → 48(H)
1	Acceptable total error line ratio 0: 5% 1: 10%	If the error line ratio for a page exceeds the acceptable ratio, RTN will be sent to the other end.	
2	Treatment of pages received with errors during G3 reception 0: Deleted from memory without printing 1: Printed	0: Pages received with errors are not printed.	
3	Hang-up decision when a negative code (RTN or PIN) is received during G3 immediate transmission 0: No hang-up, 1: Hang-up	0: The next page will be sent even if RTN or PIN is received. 1: The machine will send DCN and hang up if it receives RTN or PIN. This bit is ignored for memory transmissions or if ECM is being used.	
4-7	**Not used**	Do not change the settings.	

Communication Switch 03 [SP No. 1-104-004]		
No	**FUNCTION**	**COMMENTS**
0-7	Maximum number of page retransmissions in a G3 memory transmission	00 - FF (Hex) times. This setting is not used if ECM is switched on. Default setting - 03(H)

Communication Switch 04 - Not used (do not change the settings)
Communication Switch 05 - Not used (do not change the settings)
Communication Switch 06 - Not used (do not change the settings)
Communication Switch 07 - Not used (do not change the settings)
Communication Switch 08 - Not used (do not change the settings)

Communication Switch 09 [SP No. 1-104-010]		
No	**FUNCTION**	**COMMENTS**
0-7	IP-Fax dial interval setting	Adjusts the interval of the I-fax dialing. The interval of I-fax dialing is calculated by following formula. [Interval time = specified value with this switch x 0.2 msec]

Communication Switch 0A [SP No. 1-104-011]		
No	**FUNCTION**	**COMMENTS**
0	Point of resumption of memory transmission upon redialing 0: From the error page 1: From page 1	0: The transmission begins from the page where transmission failed the previous time. 1: Transmission begins from the first page, using normal memory transmission.
1-7	**Not used**	Do not change the settings.

Communication Switch 0B [SP No. 1-104-012]		
No	**FUNCTION**	**COMMENTS**
0-3	**Not used**	Do not change the settings.
4	Print setting when receiving a request to forward a fax	0: The machine does not print fax data. 1: The machine prints fax data.
5-7	**Not used**	Do not change the settings.

Communication Switch 0C - Not used (do not change the settings)

Communication Switch 0D [SP No. 1-104-014]		
No	**FUNCTION**	**COMMENTS**
0-7	The available memory threshold, below which ringing detection (and therefore reception into memory) is disabled	00 to FF (Hex), unit = 4 kbytes (e.g., 06(H) = 24 kbytes) One page is about 24 kbytes. The machine refers to this setting before each fax reception. If the amount of remaining memory is below this threshold, the machine cannot receive any fax messages. If this setting is kept at 0, the machine will detect ringing signals and go into receive mode even if there is no memory available. This will result in communication failure.

Communication Switch 0E [SP No. 1-104-015]		
No	**FUNCTION**	**COMMENTS**
0-7	Minimum interval between automatic dialing attempts	06 to FF (Hex), unit = 2 s (e.g., 06(H) = 12 s) This value is the minimum time that the machine waits before it dials the next destination.

Communication Switch 0F – Not used (do not change the settings.)

Communication Switch 10 [SP No. 1-104-017]		
No	**FUNCTION**	**COMMENTS**
0-7	Memory transmission: Maximum number of dialing attempts to the same destination	01 – FE (Hex) times

Communication Switch 11 – Not used (do not change the settings.)

Communication Switch 12 [SP No. 1-104-019]		
No	**FUNCTION**	**COMMENTS**
0-7	Memory transmission: Interval between dialing attempts to the same destination	01 – FF (Hex) minutes

Communication Switch 13 – Not used (do not change the settings.)

Communication Switch 14 [SP No. 1-104-021]		
No	**FUNCTION**	**COMMENTS**
0	Inch-to-mm conversion during transmission 0: Disabled 1: Enabled	0: In immediate transmission, data scanned in inch format are transmitted without conversion. In memory transmission, data stored in the SAF memory in mm format are transmitted without conversion. Note: When storing the scanned data into SAF memory, the fax unit always converts the data into mm format. 1: The machine converts the scanned data or stored data in the SAF memory to the format which was specified in the set-up protocol (DIS/NSF) before transmission.
1-5	**Not used**	Do not change the factory settings.
6-7	Available unit of resolution in which fax messages are received Bit 7: 0, Bit 6: 0 = mm Bit 7: 0, Bit 6: 1 = inch Bit 7: 1, Bit 6: 0 = mm and inch (default) Bit 7: 1, Bit 6: 1 = **Not used**	For the best performance, do not change the factory settings. The setting determined by these bits is informed to the transmitting terminal in the pre-message protocol exchange (in the DIS/NSF frames).

Communication Switch 15 – Not used (do not change the settings)

Communication Switch 16 [SP No. 1-104-023]		
No	**FUNCTION**	**COMMENTS**
0-7	**Not used**	Do not change the factory settings.

Communication Switch 17 [SP No. 1-104-024]		
No	**FUNCTION**	**COMMENTS**
0	SEP reception 0: Disabled 1: Enabled	0: Polling transmission to another maker's machine using the SEP (Selective Polling) signal is disabled.
1	SUB reception 0: Disabled 1: Enabled	0: Confidential reception to another maker's machine using the SUB (Sub-address) signal is disabled.
2	PWD reception 0: Disabled 1: Enabled	0: Disables features that require PWD (Password) signal reception.
3-4	**Not used**	Do not change the settings.
5	PSTN dial-in routing setting 0: OFF 1: ON	1: The machine sets multiple PSTN dial-in number in the PSTN dial-in lien and transfers received data of each PSTN dial-in number to each address.
6	**Not used**	Do not change the settings.
7	Action when there is no box with an F-code that matches the received SUB code 0: Disconnect the line 1: Receive the message (using normal reception mode)	Change this setting when the customer requires.

Communication Switch 18 [SP No. 1-104-025]		
No	**FUNCTION**	**COMMENTS**
0-4	**Not used**	Do not change the factory settings.
5	IP-Fax dial-in routing selection 0: Off 1: On	1: Transfers receiving data to each IP-Fax dial-in number. IP-Fax dial-in number is 4 digit-number.
6-7	**Not used**	Do not change the factory settings.

Communication Switch 19 - Not used (do not change the settings)
Communication Switch 1A - Not used (do not change the settings)

Communication Switch 1B [SP No. 1-104-028]		
No	**FUNCTION**	**COMMENTS**
0-7	Extension access code (0 to 7) to turn V.8 protocol On/Off 0: On 1: Off	If the PABX does not support V.8/V.34 protocol procedure, set this bit to "1" to disable V.8. Example: If "0" is the PSTN access code, set bit 0 to 1. When the machine detects "0" as the first dialed number, it automatically disables V.8 protocol. (Alternatively, if "3" is the PSTN access code, set bit 3 to 1.)

Communication Switch 1C [SP No. 1-104-029]		
No	**FUNCTION**	**COMMENTS**
0-1	Extension access code (8 and 9) to turn V.8 protocol On/Off 0: On 1: Off	Refer to communication switch 1B. Example: If "8" is the PSTN access code, set bit 0 to 1. When the machine detects "8" as the first dialed number, it automatically disables V.8 protocol. (If "9" is the PSTN access code, use bit 1.)
2-7	**Not used**	Do not change the settings.

Communication Switch 1D - Not used (do not change the settings)
Communication Switch 1E - Not used (do not change the settings)
Communication Switch 1F - Not used (do not change the settings)

4.3.5 G3 SWITCHES

G3 Switch 00 [SP No. 1-105-001]		
No	**FUNCTION**	**COMMENTS**
0 1	Monitor speaker during communication (tx and rx) Bit 1: 0, Bit 0: 0 = Disabled Bit 1: 0, Bit 0: 1 = Up to Phase B Bit 1: 1, Bit 0: 0 = All the time Bit 1: 1, Bit 0: 1 = **Not used**	(0, 0): The monitor speaker is disabled all through the communication. (0, 1): The monitor speaker is on up to phase B in the T.30 protocol. (1, 0): Used for testing. The monitor speaker is on all through the communication. Make sure that you reset these bits after testing.
2	Monitor speaker during memory transmission 0: Disabled 1: Enabled	1: The monitor speaker is enabled during memory transmission.
3-5	**Not used**	Do not change the settings.
6	G3 mode selection for direct line 0: Off 1:On	1: G3 communication through the direct line is enabled.
7	**Not used**	Do not change the settings.

G3 Switch 01 [SP No. 1-105-002]		
No	**FUNCTION**	**COMMENTS**
0-1	**Not used**	Do not change the settings.
2-3	**Not used**	Do not change the settings.
4	DIS frame length 0: 10 bytes 1: 4 bytes	1: The bytes in the DIS frame after the 4th byte will not be transmitted (set to 1 if there are communication problems with PC-based faxes which cannot receive the extended DIS frames).
5	**Not used**	Do not change the setting.
6	Forbid CED/AMsam output 0: Off 1: On (Forbid output)	Do not change this setting (Default: 0: Off), unless communication problem is caused by a CED or ANSam transmission.
7	**Not used**	Do not change the setting.

G3 Switch 02 [SP No. 1-105-003]		
No	**FUNCTION**	**COMMENTS**
0	G3 protocol mode used 0: Standard and non-standard 1: Standard only	Change this bit to 1 only when the other end can only communicate with machines that send T.30-standard frames only. 1: Disables NSF/NSS signals (these are used in non-standard mode communication)
1-6	**Not used**	Do not change the settings.
7	Short preamble 0: Disabled 1: Enabled	Refer to Appendix B in the Group 3 Facsimile Manual for details about Short Preamble.

G3 Switch 03 [SP No. 1-105-004]		
No	**FUNCTION**	**COMMENTS**
0	DIS detection number (Echo countermeasure) 0: 1 1: 2	0: The machine will hang up if it receives the same DIS frame twice. 1: Before sending DCS, the machine will wait for the second DIS which is caused by echo on the line.
1	**Not Used**	Do not change the settings.
2	V.8 protocol 0: Disabled 1: Enabled	0: V.8/V.34 communications will not be possible. Note: Do not set to 0 unless the line condition is always bad enough to slow down the data rate to 14.4 kbps or lower.
3	ECM frame size 0: 256 bytes 1: 64 bytes	Keep this bit at "0" in most cases.
4	CTC transmission conditions 0: After one PPR signal received 1: After four PPR signals received (ITU-T standard)	When using ECM in non-standard (NSF/NSS) mode at 14.4, 12.0, 9.6, and 7.2 kbps; 0: The machine sends a CTC to drop back the modem rate after receiving a PPR. 1:The machine sends a CTC to drop back the modem rate after receiving four PPRs.
5	Modem rate used for the next page after receiving a negative code (RTN or PIN) 0: No change 1: Fallback	1: The machine's tx modem rate will fall back before sending the next page if a negative code is received. This bit is ignored if ECM is being used.
6	**Not Used**	Do not change the settings
7	Select detection of reverse polarity in ringing 0: Off 1: On	This switch is used to prevent reverse polarity in ringing on the phone line (applied to PSTN-G3 ringing). Do not change this setting 0: No detection 1: Detection (Japan and Korea only)

G3 Switch 04 [SP No. 1-105-005]

No	FUNCTION	COMMENTS
0-3	Training error detection threshold	0 - F (Hex); 0 - 15 bits If the number of error bits in the received TCF is below this threshold, the machine informs the sender that training has succeeded.
4-7	**Not used**	Do not change the settings.

G3 Switch 05 [SP No. 1-105-006]

No	FUNCTION					COMMENTS
0-3	Initial Tx modem rate					These bits set the initial starting modem rate for transmission. Use the dedicated transmission parameters if you need to change this for specific receivers. If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually. Cross reference V.8 protocol on/off - G3 switch 03, bit2
	Bit 3	Bit 2	Bit 1	Bit 0	bps	
	0	0	0	1	2.4k	
	0	0	1	0	4.8k	
	0	0	1	1	7.2k	
	0	1	0	0	9.6k	
	0	1	0	1	12.0k	
	0	1	1	0	14.4k	
	0	1	1	1	16.8k	
	1	0	0	0	19.2k	
	1	0	0	1	21.6k	
	1	0	1	0	24.0k	
	1	0	1	1	26.4k	
	1	1	0	0	28.8k	
	1	1	0	1	31.2k	

	1	1	1	0	33.6k	
	Other settings - **Not used**					
4-5	Initial modem type for 9.6 k or 7.2 kbps. Bit 5: 0, Bit 4: 0 = V.29 Bit 5: 0, Bit 4: 1 = V.17 Bit 5: 1, Bit 4: 0 = V.34 Bit 5: 1, Bit 4: 1 = **Not used**					These bits set the initial modem type for 9.6 and 7.2 kbps, if the initial modem rate is set at these speeds.
6-7	**Not used**					Do not change the settings.

G3 Switch 06 [SP No. 1-105-007]

No	FUNCTION					COMMENTS
0-3	Initial Rx modem rate					▪ These bits set the initial starting modem rate for reception. ▪ Use a lower setting if high speeds pose problems during reception. ▪ If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually. Cross reference: V.8 protocol on/off - G3 switch 03, bit2
	Bit 3	Bit 2	Bit 1	Bit 0	bps	
	0	0	0	1	2.4k	
	0	0	1	0	4.8k	
	0	0	1	1	7.2k	
	0	1	0	0	9.6k	
	0	1	0	1	12.0k	
	0	1	1	0	14.4k	
	0	1	1	1	16.8k	
	1	0	0	0	19.2k	
	1	0	0	1	21.6k	
	1	0	1	0	24.0k	
	1	0	1	1	26.4k	
	1	1	0	0	28.8k	
	1	1	0	1	31.2k	

<table>
<tr><td rowspan="2"></td><td>1</td><td>1</td><td>1</td><td>0</td><td>33.6k</td><td rowspan="2"></td></tr>
<tr><td colspan="5">Other settings - Not used</td></tr>
<tr><td rowspan="9">4-7</td><td colspan="5">Modem types available for reception</td><td rowspan="9">▪ The setting of these bits is used to inform the transmitting terminal of the available modem type for the machine in receive mode.
▪ If V.34 is not selected, V.8 protocol must be disabled manually.
Cross reference:
V.8 protocol on/off - G3 switch 03, bit2</td></tr>
<tr><td>Bit 7</td><td>Bit 6</td><td>Bit 5</td><td>Bit 4</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>1</td><td>V.27ter</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>0</td><td>V.27ter, V.29</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td><td>V.27ter, V.29</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>0</td><td>V.27ter, V.29, V.17</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>1</td><td>V.27ter, V.29, V.17, V.34</td></tr>
<tr><td colspan="5">Other settings - Not used</td></tr>
</table>

G3 Switch 07 [SP No. 1-105-008]		
No	**FUNCTION**	**COMMENTS**
0-1	PSTN cable equalizer (tx mode: Internal) Bit 1: 0, Bit 0: 0 = None Bit 1: 0, Bit 0: 1 = Low Bit 1: 1, Bit 0: 0 = Medium Bit 1: 1, Bit 0: 1 = High	Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange. Use the dedicated transmission parameters for specific receivers. Also, try using the cable equalizer if one or more of the following symptoms occurs. Communication error Modem rate fallback occurs frequently. Note ▪ This setting is not effective in V.34 communications.

2-3	PSTN cable equalizer (rx mode: Internal) Bit 3: 0, Bit 2: 0 = None Bit 3: 0, Bit 2: 1 = Low Bit 3: 1, Bit 2: 0 = Medium Bit 3: 1, Bit 2: 1 = High	Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange. Also, try using the cable equalizer if one or more of the following symptoms occurs. Communication error with error codes such as 0-20, 0-23, etc. Modem rate fallback occurs frequently. Note ▪ This setting is not effective in V.34 communications.
4	PSTN cable equalizer (rx mode: External) 0: Disabled 1: Enabled	Keep this bit at "1". Note ▪ This setting is not effective in V.34 communications.
5	**Not used**	Do not change the settings.
6	Parameter selection for dial tone detection 0: Normal parameter 1: Specific parameter	0: This uses the fixed table in the ROM for dial tone detection. 1: This uses the specific parameter adjusted with SRAM (69ECBEH - 69ECDEH). Select this if the dial tone cannot be detected when the "Normal parameter: 0" is selected.
7	**Not used**	Do not change the settings.

G3 Switch 08 - Not used (do not change the settings)
G3 Switch 09 - Not used (do not change the settings)

G3 Switch 0A [SP No. 1-105-011]		
No	**FUNCTION**	**COMMENTS**
0-1	Maximum allowable carrier drop during image data reception Bit 1: 0, Bit 0: 0 = 200 (ms) Bit 1: 0, Bit 0: 1 = 400 (ms) Bit 1: 1, Bit 0: 0 = 800 (ms) Bit 1: 1, Bit 0: 1 = **Not used**	These bits set the acceptable modem carrier drop time at the non ECM mode. Try using a longer setting if error code 0-22 is frequent.
2	Select cancellation of high-speed RX if carrier signal lost while receiving 0: Off 1: On	This switch setting determines if high-speed receiving ends if the carrier signal is lost when receiving during non-ECM mode
3	**Not used**	Do not change the settings
4	Maximum allowable frame interval during image data reception. 0: 5 s 1: 13 s	This bit set the maximum interval between EOL (end-of-line) signals and the maximum interval between ECM frames from the other end. Try using a longer setting if error code 0-21 is frequent.
5	**Not used**	Do not change the settings.
6	Reconstruction time for the first line in receive mode 0: 6 s 1: 12 s	When the sending terminal is controlled by a computer, there may be a delay in receiving page data after the local machine accepts set-up data and sends CFR. This is outside the T.30 recommendation. But, if this delay occurs, set this bit to 1 to give the sending machine more time to send data. Refer to error code 0-20. ITU-T T.30 recommendation: The first line should come within 6 s of CFR.
7	**Not used**	Do not change the settings.

G3 Switch 0B - Not used (do not change the settings).
G3 Switch 0C - Not used (do not change the settings)
G3 Switch 0D - Not used (do not change the settings).

G3 Switch 0E [SP No 1-105-015]		
0-7	Set CNG send time interval Some machines on the receiving side may not be able to automatically switch the 3-second CNG interval.	
	High order bit	3000-2250ms: 3000-50xNms 3000 – 50 x Nms 0F (3000 ms) < N < FF (2250 ms)
	Low order bit	3000-3700ms: 3000+50xNms 3000 + 50 x Nms 00 (3000 ms) < N < 0E (3700 ms)

G3 Switch 0F [SP No. 1-105-016]		
No	**FUNCTION**	**COMMENTS**
0	Alarm when an error occurred in Phase C or later 0: Disabled 1: Enabled	If the customer wants to hear an alarm after each error communication, change this bit to "1".
1	Alarm when the handset is off-hook at the end of communication 0: Disabled 1: Enabled	If the customer wants to hear an alarm if the handset is off-hook at the end of fax communication, change this bit to "1".
2	**Not used**	Do not change the settings.
4	Sidaa manual calibration setting 0: Off 1: On	1: manually calibrates for communication with a line, whose current change occurs such as an optical fiber line.
5-7	**Not used**	Do not change the settings.

4.3.6 IP FAX SWITCHES

IP Fax Switch 00 [SP No. 1-111-001]		
No.	**FUNCTION**	**COMMENTS**
0	**Not used**	Do not change this setting.
1	IP Fax Transport 0: TCP, 1: UDP	Selects TCP or UDP protocol for IP-Fax
2	IP Fax single port selection 0: OFF, 1: ON (enable)	Selects single data port.
3	IP Fax double ports (single data port) selection 0: OFF, 1: ON (enable)	Selects whether IP-Fax uses a double port.
4	IP Fax Gatekeeper 0: OFF, 1: ON (enable)	Enables/disables the communication via the gatekeeper for IP-Fax.
5	IP Fax T30 bit signal reverse 0: LSB first, 1: MSB first	Reverses the T30 bit signal.
6	IP Fax max bit rate setting 0: Not affected, 1: Affected	When "0" is selected, the max bit rate does not affect the value of the DIS/DCS. When "1" is selected, the max bit rate affects the value of the DIS/DCS.
7	IP Fax received telephone number confirmation 0: No confirmation, 1: Confirmation	When "0" is selected, fax data is received without checking the telephone number. When "1" is selected, fax data is received only when confirming that the telephone number from the sender matches the registered telephone number in this machine. If this confirmation fails, the line is disconnected.

IP-Fax Switch 01

<table>
<tr><th>No.</th><th>FUNCTION</th><th>COMMENTS</th></tr>
<tr><td rowspan="8">0-3</td><td colspan="5">Select IP FAX Delay Level</td><td rowspan="8">Raise the level by selecting a higher setting if too many transmission errors are occurring on the network.
If TCP/UDP is enabled on the network, raise this setting on the T.30 machine. Increasing the delay time allows the recovery of more lost packets.
If only UDP is enabled, increase the number of redundant packets.
Level 1~2: 3 Redundant packets
Level 3: 4 Redundant packets</td></tr>
<tr><td>Bit3</td><td>Bit2</td><td>Bit1</td><td>Bit0</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>0</td><td>Level 0</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>1</td><td>Level 1</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>0</td><td>Level 2</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td><td>Level 3</td></tr>
<tr><td colspan="5"></td></tr>
<tr><td>4-7</td><td colspan="5">IP Fax preamble wait time setting</td><td>Selects the preamble wait time.
[00 to 0f]
There are 16 values in this 4-bit binary switch combination.
Waiting time: set value level x 100 ms
Max: 0f (1500 ms) Min: 00 (No wait time)
The default is "0000" (00H).</td></tr>
</table>

IP Fax Switch 02 [SP No. 1-111-003]		
No.	**FUNCTION**	**COMMENTS**
0	IP Fax bit signal reverse setting 0: Maker code setting 1: Internal bit switch setting	When "0" is selected, the bit signal reverse method is decided by the maker code. When "1" is selected, the bit signal reverse method is decided by the internal bit switch. When communicating between IP Fax devices, LSB first is selected.)
1	IP Fax transmission speed setting 0: Modem speed 1: No limitation	Selects the transmit speed for IP Fax communication.
2	SIP transport setting 0: TCP 1: UDP	This bit switch sets the transport that has priority for receiving IP Fax data. This function is activated only when the sender has both TCP and UDP.
3	CCM connection 0: No CCM connection 1: CCM connection	When "1" is selected, only the connection call message with H.323 or no tunneled H.245 is transmitted via CCM.
4	Message reception selection from non-registered SIP server 0: Answer 1: Not answer	0: This answers the INVITE message from the SIP server not registered for the machine. 1: This does not receive the INVITE message from the SIP server not registered for the machine and send a refusal message.
5	ECM communication setting 0: No limit for image compression 1: Limit for image compression	0: This does not limit the type of the image compression with ECM communication. 1: When the other end machine is Ciscco, this permits the image compression other than JBIG or MMR with ECM communication.
6-7	**Not used**	Do not change these settings.

IP Fax Switch 03 [SP No. 1-111-004]		
No.	**FUNCTION**	**COMMENTS**
0	Effective field limitation for G3 standard function information 0: OFF, 1: 4byte (DIS)	Limits the effective field for standard G3 function information.
1	Switching between G3 standard and G3 non standard 0: Enable switching 1: G3 standard only	Enables/disables switching between G3 standard and G3 non-standard.
2	Not used.	Do not change this setting.
3	ECM frame size selection at transmitting 0: 256byte, 1: 64byte	Selects the ECM frame size for sending.
4	DIS detection times for echo prevention 0: 1 time, 1: 2 times	Sets the number of times for DIS to detect echoes.
5	CTC transmission selection 0: PPRx1 1: PPRx4	When "0" is selected, the transmission condition is decided by error frame numbers. When "1" is selected, the transmission condition is based on the ITU-T method.
6	Shift down setting at receiving negative code 0: OFF, 1: ON	Selects whether to shift down when negative codes are received.
7	**Not used**	Do not change this setting.

IP Fax Switch 04 [SP No. 1-111-005]		
No.	**FUNCTION**	**COMMENTS**
0	TCF error threshold	Sets the TCF error threshold level. [00 to 0f] The default is "1111" (0fH).
1		
2		
3		
4-7	**Not used**	Do not change these settings.

IP Fax Switch 05 [SP No. 1-111-006]					
No.	**FUNCTION**			**COMMENTS**	
0-3	Modem bit rate setting for transmission Sets the modem bit rate for transmission. The default is "0110" (14.4K bps).				
	Bit 3	Bit 2	Bit 1	Bit 0	
	0	0	0	1	2400 bps
	0	0	1	1	4800 bps
	0	0	1	1	7200 bps
	0	1	0	0	9600 bps
	0	1	0	1	12.0 Kbps
	0	1	1	0	14.4 Kbps
4-5	Modem setting for transmission Sets the modem for transmission. The default is "00" (V29). Bit 5: 0, Bit 4: 0 = V29 Bit 5: 0, Bit 4: 1 = V17 Bit 5: 1, Bit 4: 0 = V34* Bit 5: 1, Bit 4: 1 = **Not used** *V34 is not supported for IP-Fax communication.				

6-7	**Not used**	Do not change these settings.

IP Fax Switch 06 [SP No. 1-111-007]

No.	FUNCTION				COMMENTS
0-3	Modem bit rate setting for reception Sets the modem bit rate for reception. The default is "0110" (14.4K bps).				
	Bit 3	Bit 2	Bit 1	Bit 0	
	0	0	0	1	2400 bps
	0	0	1	0	4800 bps
	0	0	1	1	7200 bps
	0	1	0	0	9600 bps
	0	1	0	1	12.0 Kbps
	0	1	1	0	14.4 Kbps
4-7	Modem setting for reception Sets the modem type for reception. The default is "0100" (V27ter, V29, V17).				
	Bit 7	Bit 6	Bit 5	Bit 4	
	0	0	0	1	V27ter
	0	0	1	0	V27ter, V29
	0	0	1	1	V27ter, V29, V33 (invalid)
	0	1	0	0	V27ter, V29, V17
	0	1	0	1	V27ter, V29, V17, V34*
	*V34 is not supported for IP-Fax communication.				

IP Fax Switch 07 [SP No. 1-111-008]		
No.	**FUNCTION**	**COMMENTS**
0	TSI information 0: Not added, 1: Added	Adds or does not add TSI information to NSS(S).
1	DCN transmission setting at T1 timeout 0: Not transmitted, 1: Transmitted	Transmits or does not transmit DCN at T1 timeout.
2	**Not used**	Do not change this setting.
3	Hang up setting at DIS reception disabled 0: No hang up 1: Hang up after transmitting DCN	Sets whether the machine disconnects after DIS reception.
4	Number of times for training 0: 1 time, 1: 2 times	Selects the number of times training is done at the same bit rate.
5	Space CSI transmission setting at no CSI registration 0: Not transmitted, 1: Transmitted	When "0" is selected, frame data is enabled. When "1" is selected, the transmitted data is all spaces.
6-7	**Not used**	Do not change these settings.

IP Fax Switch 08 [SP No. 1-111-009]		
No.	**FUNCTION**	**COMMENTS**
0-1	T1 timer adjustment Adjusts the T1 timer. The default is "00" (35 seconds). Bit 1: 0, Bit 0: 0 = 35 sec Bit 1: 0, Bit 0: 1 = 40 sec Bit 1: 1, Bit 0: 0 = 50 sec Bit 1: 1, Bit 0: 1 = 60 sec	-
2-3	T4 timer adjustment Adjust the T4 timer. The default is "00" (3 seconds). Bit 3: 0, Bit 2: 0 = 3 sec Bit 3: 0, Bit 2: 1 = 3.5 sec Bit 3: 1, Bit 2: 0 = 4 sec Bit 3: 1, Bit 2: 1 = 5 sec	-
4-5	T0 timer adjustment Bit 5: 0, Bit 4: 0 = 75 sec Bit 5: 0, Bit 4: 1 = 120 sec Bit 5: 1, Bit 4: 0 = 180 sec Bit 5: 1, Bit 4: 1 = 240 sec	Adjusts the fail safe timer. This timer sets the interval between "setup" data transmission and T.38 phase decision. If your destination return is late on the network or G3 fax return is late, adjust the longer interval timer. The default is "00" (75 seconds).
6-7	**Not used**	Do not change these settings.

<table>
<tr><th colspan="5">IP Fax Switch 09 [SP No. 1-111-010]</th></tr>
<tr><th>No.</th><th colspan="3">FUNCTION</th><th>COMMENTS</th></tr>
<tr><td>0</td><td colspan="3">Network I/F setting for SIP connection
0: IPv4
1: IPv6.</td><td>Selects the connection type (IPV4 or IPV6) to connect to the SIP server.</td></tr>
<tr><td>1</td><td colspan="3">Network I/F setting for Fax communication
0: Same setting as SIP server connection
1: Automatic setting</td><td>0: The I/F setting for fax communication follows the setting for SIP server connection.
1: The negotiation between the SIP server and the device decides whether IPv4 or IPv6 is used for the I/F setting for fax communication.</td></tr>
<tr><td>2</td><td colspan="3">Record-route setting
0: Disable
1: Enable</td><td>0: Disables the record-route function of the SIP server.
1: Enables the record-route function of the SIP server.</td></tr>
<tr><td rowspan="6">3-4</td><td colspan="3">re-INVITE transmission delay timer setting</td><td rowspan="6">This changes the interval for transmit re-INVITE after receiving the ACK message transmitted by T.38 device.</td></tr>
<tr><td>Bit 4</td><td>Bit 3</td><td></td></tr>
<tr><td>0</td><td>0</td><td>No delay</td></tr>
<tr><td>0</td><td>1</td><td>1 sec</td></tr>
<tr><td>1</td><td>0</td><td>2 sec</td></tr>
<tr><td>1</td><td>1</td><td>3 sec</td></tr>
<tr><td>5-7</td><td colspan="3">Not used.</td><td>Do not change these settings.</td></tr>
</table>

4.4 NCU PARAMETERS

The following tables give the RAM addresses and the parameter calculation units that the machine uses for ringing signal detection and automatic dialing. The factory settings for each country are also given. Most of these must be changed by RAM read/write (SP2-101), but some can be changed using NCU Parameter programming (SP2-103, 104 and 105); if SP2-103, 104 and 105 can be used, this will be indicated in the Remarks column. The RAM is programmed in hex code unless (BCD) is included in the Unit column.

Note

- The following addresses describe settings for the standard NCU.
- Change the fourth digit from “5” to “6” (e.g. 680500 to 680600) for the settings for the first optional G3 interface unit and from “5” to “7” (e.g. 680700) for the settings for the second optional G3 interface unit.

Address	Function					
680500	Country/Area code for NCU parameters					
	Use the Hex value to program the country/area code directly into this address, or use the decimal value to program it using SP2-103-001					
	Country /Area	**Decimal**	**Hex**	**Country /Area**	**Decimal**	**Hex**
	France	00	00	USA	17	11
	Germany	01	01	Asia	18	12
	UK	02	02	Hong Kong	20	14
	Italy	03	03	South Africa	21	15
	Austria	04	04	Australia	22	16
	Belgium	05	05	New Zealand	26	17
	Denmark	06	06	Singapore	24	18
	Finland	07	07	Malaysia	25	19
	Ireland	08	08	China	26	1A
	Norway	09	09	Taiwan	27	1B

Address	Function					
	Sweden	10	0A	Korea	28	1C
	Switzerland	11	0B	Brazil	29	1D
	Portugal	12	0C	Turkey	32	20
	Holland	13	0D	Greece	33	21
	Spain	14	0E	Hungary	34	22
	Israel	15	0F	Czech	35	23
				Poland	36	24

Address	Function	Unit	Remarks
680501	Line current detection time	20 ms	Line current detection is disabled. Line current is not detected if 680501 contains FF.
680502	Line current wait time		
680503	Line current drop detect time		
680504	PSTN dial tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680505	PSTN dial tone frequency upper limit (low byte)		
680506	PSTN dial tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680507	PSTN dial tone frequency lower limit (low byte)		
680508	PSTN dial tone detection time	20 ms	If 680508 contains FF(H), the machine pauses for the pause time (address 68050D / 68050E). Italy: See Note 2.
680509	PSTN dial tone reset time (LOW)		
68050A	PSTN dial tone reset time (HIGH)		
68050B	PSTN dial tone continuous tone time		

Address	Function	Unit	Remarks
68050C	PSTN dial tone permissible drop time		
68050D	PSTN wait interval (LOW)		-
68050E	PSTN wait interval (HIGH)		
68050F	PSTN ring-back tone detection time	20 ms	Detection is disabled if this contains FF.
680510	PSTN ring-back tone off detection time	20 ms	-
680511	PSTN detection time for silent period after ring-back tone detected (LOW)	20 ms	-
680512	PSTN detection time for silent period after ring-back tone detected (HIGH)	20 ms	-
680513	PSTN busy tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680514	PSTN busy tone frequency upper limit (low byte)		
680515	PSTN busy tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680516	PSTN busy tone frequency lower limit (low byte)		
680517	PABX dial tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680518	PABX dial tone frequency upper limit (low byte)		
680519	PABX dial tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone

Address	Function	Unit	Remarks
68051A	PABX dial tone frequency lower limit (low byte)		detection is disabled.
68051B	PABX dial tone detection time	20 ms	If 68051B contains FF, the machine pauses for the pause time (680520 / 680521).
68051C	PABX dial tone reset time (LOW)		
68051D	PABX dial tone reset time (HIGH)		
68051E	PABX dial tone continuous tone time		
68051F	PABX dial tone permissible drop time		
680520	PABX wait interval (LOW)		-
680521	PABX wait interval (HIGH)		
680522	PABX ringback tone detection time	20 ms	If both addresses contain FF(H), tone detection is disabled.
680523	PABX ringback tone off detection time	20 ms	
680524	PABX detection time for silent period after ringback tone detected (LOW)	20 ms	If both addresses contain FF(H), tone detection is disabled.
680525	PABX detection time for silent period after ringback tone detected (HIGH)	20 ms	
680526	PABX busy tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680527	PABX busy tone frequency upper limit (low byte)		
680528	PABX busy tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680529	PABX busy tone frequency lower limit (low byte)		

Address	Function	Unit	Remarks
68052A	Busy tone ON time: range 1	20 ms	-
68052B	Busy tone OFF time: range 1		
68052C	Busy tone ON time: range 2		
68052D	Busy tone OFF time: range 2		
68052E	Busy tone ON time: range 3		
68052F	Busy tone OFF time: range 3	20 ms	
680530	Busy tone ON time: range 4		
680531	Busy tone OFF time: range 4		
680532	Busy tone continuous tone detection time		
680533	Busy tone signal state time tolerance for all ranges, and number of cycles required for detection (a setting of 4 cycles means that ON-OFF-ON or OFF-ON-OFF must be detected twice). Tolerance (±) Bit 1: 0, Bit 0: 0 = 75% Bits 2 and 3 must always be kept at 0. Bit 1: 0, Bit 0: 0 = 50% Bits 2 and 3 must always be kept at 0. Bit 1: 0, Bit 0: 0 = 25% Bit 1: 0, Bit 0: 0 = 12.5% Bits 7, 6, 5, 4 - number of cycles required for cadence detection		
680534	International dial tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680535	International dial tone frequency upper limit (low byte)		
680536	International dial tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680537	International dial tone frequency lower limit (low byte)		
680538	International dial tone detection time	20 ms	If 680538 contains FF, the machine pauses for

Address	Function	Unit	Remarks
680539	International dial tone reset time (LOW)		the pause time (68053D / 68053E). Belgium: See Note 2.
68053A	International dial tone reset time (HIGH)		
68053B	International dial tone continuous tone time		
68053C	International dial tone permissible drop time		
68053D	International dial wait interval (LOW)		-
68053E	International dial wait interval (HIGH)		
68053F	Country dial tone upper frequency limit (HIGH)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680540	Country dial tone upper frequency limit (LOW)		
680541	Country dial tone lower frequency limit (HIGH)		If both addresses contain FF(H), tone detection is disabled.
680542	Country dial tone lower frequency limit (LOW)		
680543	Country dial tone detection time	20 ms	If 680543 contains FF, the machine pauses for the pause time (680548 / 680549).
680544	Country dial tone reset time (LOW)		
680545	Country dial tone reset time (HIGH)		
680546	Country dial tone continuous tone time	-	-
680547	Country dial tone permissible drop time	20 ms	-

Address	Function	Unit	Remarks
680548	Country dial wait interval (LOW)		
680549	Country dial wait interval (HIGH)		
68054A	**DFU**	1 ms	See Notes 3. SP2-103-012 (parameter 11).
68054B	Break time for pulse dialing	1 ms	See Note 3. SP2-103-013 (parameter 12).
68054C	Make time for pulse dialing	1 ms	See Note 3. SP2-103-014 (parameter 13).
68054D	**DFU**	1 ms	See Notes 3. SP2-103-015 (parameter 14). This parameter is only valid in Europe.
68054E	Minimum pause between dialed digits (pulse dial mode)	20 ms	See Note 3. SP2-103-016 (parameter 15).
68054F	Time waited when a pause is entered at the operation panel		SP2-103-017 (parameter 16)
680550	DTMF tone on time	1 ms	SP2-103-018 (parameter 17).
680551	DTMF tone off time		SP2-103-019 (parameter 18).
680552	DTMF signal TX level	-0.5 dBm	SP2-103-020 (parameter 19). See Note 5.

Address	Function	Unit	Remarks
680553	Tone attenuation value difference between high frequency tone and low frequency tone in DTMF signals	-0.5 dBm	SP2-103-021 (parameter 20). The setting must be less than –5dBm, and should not exceed the setting at 680552h above. See Note 5.
680554	**DFU** **DFU parameter 22**	-N x 0.5 –3.5 dBm	SP2-103-022 (parameter 21). See Note 5.
680556	Not used	-	Do not change the settings.
680557	Time between 68054Dh (NCU parameter 14) and 68054Eh (NCU parameter 15)	1 ms	This parameter takes effect when the country code is set to France.
680558	Not used	-	Do not change the setting.
680559	Grounding time (ground start mode)	20 ms	The Gs relay is closed for this interval.
68055A	Break time (flash start mode)	1 ms	The OHDI relay is open for this interval.
68055B	International dial access code (High)	BCD	For a code of 100: 68055B - F1 68055C - 00
68055C	International dial access code (Low)		

Address	Function	Unit	Remarks
68055D	PSTN access pause time	20 ms	This time is waited for each pause input after the PSTN access code. If this address contains FF[H], the pause time stored in address 68054F is used. Do not set a number more than 7 in the UK.
68055E	Progress tone detection level, and cadence detection enable flags	Bit 7: 0, Bit 6: 0, Bit 5: 0 = -25.0 dBm Bit 7: 0, Bit 6: 0, Bit 5: 1 = -35.0 dBm Bit 7: 0, Bit 6: 1, Bit 5: 0 = -30.0 dBm Bit 7: 1, Bit 6: 0, Bit 5: 0 = -40.0 dBm Bit 7: 1, Bit 6: 1, Bit 5: 0 = -49.0 dBm Bits 2, 0 - See Note 2.	
68055F To 680564	**Not used**	-	Do not change the settings.
680565	Long distance call prefix (HIGH)	BCD	For a code of 0: 680565 – FF 680566 - FF
680566	Long distance call prefix (LOW)	BCD	
680567 to 680571	**Not used**	-	Do not change the settings.
680572	Acceptable ringing signal frequency: range 1, upper limit	1000/ N (Hz).	SP2-103-003 (parameter 02).
680573	Acceptable ringing signal frequency: range 1, lower limit		SP2-103-004 (parameter 03).
680574	Acceptable ringing signal frequency: range 2, upper limit		SP2-103-005 (parameter 04).
680575	Acceptable ringing signal frequency: range 2, lower limit		SP2-103-006 (parameter 05).

Address	Function	Unit	Remarks
680576	Number of rings until a call is detected	1	SP2-103-007 (parameter 06). The setting must not be zero.
680577	Minimum required length of the first ring	20 ms	See Note 4. SP2-103-008 (parameter 07).
680578	Minimum required length of the second and subsequent rings	20 ms	SP2-103-009 (parameter 08).
680579	Ringing signal detection reset time (LOW)	20 ms	SP2-103-010 (parameter 09).
68057A	Ringing signal detection reset time (HIGH)		SP2-103-011 (parameter 10).
68057B to 680580	**Not used**	-	Do not change the settings.
680581	Interval between dialing the last digit and switching the Oh relay over to the external telephone when dialing from the operation panel in handset mode.	20 ms	Factory setting: 500 ms
680582	Bits 0 and 1 - Handset off-hook detection time Bit 1:0, Bit 0: 0 = 200 ms Bit 1:0, Bit 0: 1 = 800 ms Other Not used Bits 2 and 3 - Handset on-hook detection time Bit 3: 0, Bit 2: 0 = 200 ms Bit 3: 0, Bit 2: 1 = 800 ms Other Not used Bits 4 to 7 - **Not used**		-

Address	Function	Unit	Remarks
680583 To 6805A0	**Not used**	-	Do not change the settings.
6805A1	Acceptable CED detection frequency upper limit (high byte)	BCD (Hz)	If both addresses contain FF(H), tone detection is disabled.
6805A2	Acceptable CED detection frequency upper limit (low byte)		
6805A3	Acceptable CED detection frequency lower limit (high byte)	BCD (Hz)	If both addresses contain FF(H), tone detection is disabled.
6805A4	Acceptable CED detection frequency lower limit (low byte)		
6805A5	CED detection time	20 ms ± 20 ms	Factory setting: 200 ms
6805A6	Acceptable CNG detection frequency upper limit (high byte)	BCD (Hz)	If both addresses contain FF(H), tone detection is disabled.
6805A7	Acceptable CNG detection frequency upper limit (low byte)		
6805A8	Acceptable CNG detection frequency lower limit (high byte)	BCD (Hz)	If both addresses contain FF(H), tone detection is disabled.
6805A9	Acceptable CNG detection frequency lower limit (low byte)		
6805AA	**Not used**	-	Do not change the setting.
6805AB	CNG on time	20 ms	Factory setting: 500 ms
6805AC	CNG off time	20 ms	Factory setting: 3000 ms
6805AD	Number of CNG cycles required for detection	-	The data is coded in the same way as address 680533.

Address	Function	Unit	Remarks
6805AE	**Not used**	-	Do not change the settings.
6805AF	Acceptable AI short protocol tone (800Hz) detection frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
6805B0	Acceptable AI short protocol tone (800Hz) detection frequency upper limit (low byte)		
6805B1	Acceptable AI short protocol tone (800Hz) detection frequency lower limit (high byte)	Hz(BCD)	If both addresses contain FF(H), tone detection is disabled.
6805B2	Acceptable AI short protocol tone (800Hz) detection frequency lower limit (low byte)		
6805B3	Detection time for 800 Hz AI short protocol tone	20 ms	Factory setting: 360 ms
6805B4	PSTN: Tx level from the modem	-dBm	SP2-103-002 (parameter 01).
6805B5	PSTN: 1100 Hz tone transmission level	- N 6805B4 - 0.5N 6805B5 –3.5 (dB) See Note 7.	
6805B6	PSTN: 2100 Hz tone transmission level	- N6805B4 - 0.5N 6805B6 –3 (dB) See Note 7.	
6805B7	PABX: Tx level from the modem	- dBm	
6805B8	PABX: 1100 Hz tone transmission level	- N 6805B7 - 0.5N 6805B8 (dB)	
6805B9	PABX: 2100 Hz tone transmission level	- N 6805B7 - 0.5N 6805B9 (dB)	
6805BD	Modem turn-on level (incoming signal detection level)	-37-0.5N (dBm)	

Address	Function	Unit	Remarks
6805BE to 6805C6	**Not used**	-	Do not change the settings.
6805C7	Bits 0 to 3 – **Not used** Bit 4 = V.34 protocol dump 0: Simple, 1: Detailed (default) Bits 5 to 7 – **Not used.**		
6805C8 to 6805D9	**Not used**	-	Do not change the settings.
6805DA	T.30 T1 timer	1 s	
6805E0 bit 3	Maximum wait time for post message	0: 12 s 1: 30 s	1: Maximum wait time for post message (EOP/EOM/MPS) can be changed to 30 s. Change this bit to “1” if communication errors occur frequently during V.17 reception.

6805E4	Bit 1 sets the level of the call signal, Bit 3 sets the call signal impedance	Bit 1	0	RT=0 (Low)	-
			1	RT=1 (High)	
		Bit 3	0	RZ=0 (High)	
			1	RZ=1 (Composite)	
6805E5	Bit 0 sets the ring detection method, Bit 1 sets the ring detection method when fixed.	Bit 0	0	Auto	If any setting is changed, select a setting that is higher than the default setting.
			1	Fixed	
		Bit 1	0	Use RDTP	
			1	Use RDTN	
	Here is a summary of the voltages for the detection of off-hook for DP detection.				

Bit 7	Bit 6	Bit 5	Bit 4	-

Address	Function				Unit	Remarks
	0	0	0	0	**Not used**	
	0	0	0	1	2.75 V	
	0	0	1	0	5.5 V	
	1	0	0	0	22 V	
	1	1	1	1	41.25 V	

NOTES

1. If a setting is not required, store FF in the address.
2. Italy and Belgium only
   RAM address 68055E: the lower four bits have the following meaning.
   Bit 2 - 1: International dial tone cadence detection enabled (Belgium)
   Bit 1 - Not used
   Bit 0 - 1: PSTN dial tone cadence detection enabled (Italy)

   If bit 0 or bit 2 is set to 1, the functions of the following RAM addresses are changed.
   680508 (if bit 0 = 1) or 680538 (if bit 2 = 1): tolerance for on or off state
   duration (%), and number of cycles required for detection, coded as in address 680533.
   68050B (if bit 0 = 1) or 68053B (if bit 2 = 1): on time, hex code (unit = 20 ms)
   68050C (if bit 0 = 1) or 68053C (if bit 2 = 1): off time, hex code (unit = 20 ms)
3. Pulse dial parameters (addresses 68054A to 68054F) are the values for 10 pps. If 20 pps is used, the machine automatically compensates.
4. The first ring may not be detected until 1 to 2.5 wavelengths after the time specified by this parameter.
5. Tone signals which frequency is lower than 1500Hz (e.g., 800Hz tone for AI short protocol) refer to the setting at 6805B5h. Tones which frequency is higher than 1500Hz refer to the setting at 6805B6h.

4.5 DEDICATED TRANSMISSION PARAMETERS

There are two sets of transmission parameters: Fax and E-mail

Each Quick Dial Key and Speed Dial Code has eight bytes of programmable parameters allocated to it. If transmissions to a particular machine often experience problems, store that terminal's fax number as a Quick Dial or Speed Dial, and adjust the parameters allocated to that number.

The programming procedure will be explained first. Then, the eight bytes will be described.

4.5.1 PROGRAMMING PROCEDURE

1. Set the bit 0 of System Bit Switch 00 to 1.
2. Enter Address Book Management mode ([User Tools]> System Settings> Key Operator> Address Book Management).
3. Select the address book that you want to program.
4. For the fax parameter, select "Fax Dest.", for the E-mail parameter, select "E-mail", then press "Start". Make sure that the LED of the Start button lights green.
5. The settings for the switch 00 are now displayed. Press the bit number that you wish to change.
6. To scroll through the parameter switches, either:
7. Select the next switch: press "Next" or Select the previous switch: "Prev." until the correct switch is displayed. Then go back to step 6.
8. After the setting is changed, press "OK".
9. After finishing, reset bit 0 of System Bit Switch 00 to 0.

4.5.2 PARAMETERS

Fax Parameters

The initial settings of the following fax parameters are all FF(H) - all the parameters are disabled.

Switch 00
FUNCTION AND COMMENTS
ITU-T T1 time (for PSTN G3 mode) If the connection time to a particular terminal is longer than the NCU parameter setting, adjust this byte. The T1 time is the value stored in this byte (in hex code), multiplied by 1 second. **Range:** 0 to 120 s (00h to 78h) FFh - The local NCU parameter factory setting is used. Do not program a value between 79h and FEh.

Switch 01

No	FUNCTION						COMMENTS
0-4	Tx level						If communication with a particular remote terminal often contains errors, the signal level may be inappropriate. Adjust the Tx level for communications with that terminal until the results are better. If the setting is "Disabled", the NCU parameter 01 setting is used. Note ▪ Do not use settings other than listed on the left.
	Bit4	Bit3	Bit2	Bit1	Bit0		
	0	0	0	0	0	0	
	0	0	0	0	1	–1	
	0	0	0	1	0	–2	
	0	0	0	1	1	–3	
	0	0	1	0	0	–4	
	↓	↓	↓	↓	↓	↓	
	0	1	1	1	1	–15	
	1	1	1	1	1	Disabled	

5-7	Cable equalizer Bit 7: 0, Bit 6: 0, Bit 5: 0 = None Bit 7: 0, Bit 6: 0, Bit 5: 1 = Low Bit 7: 0, Bit 6: 1, Bit 5: 0 = Medium Bit 7: 0, Bit 6: 1, Bit 5: 1 = High Bit 7: 1, Bit 6: 1, Bit 5: 1 = Disabled	Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange when calling the number stored in this Quick/Speed Dial. Also, try using the cable equalizer if one or more of the following symptoms occurs. Communication error with error codes such as 0-20, 0-23, etc. Modem rate fallback occurs frequently. Note ▪ Do not use settings other than listed on the left. If the setting is "Disabled", the bit switch setting is used.

Switch 02

No	FUNCTION					COMMENTS
0-3	Initial Tx modem rate					If training with a particular remote terminal always takes too long, the initial modem rate may be too high. Reduce the initial Tx modem rate using these bits. For the settings 14.4 or kbps slower, Switch 04 bit 4 must be changed to 0. Note ▪ Do not use settings other than listed on the left. If the setting is "Disabled", the bit switch setting is used.
	Bit3	Bit2	Bit1	Bit0	bps	
	0	0	0	0	Not used	
	0	0	0	1	2400	
	0	0	1	0	4800	
	0	0	1	1	7200	
	0	1	0	0	9600	
	0	1	0	1	12000	
	0	1	1	0	14400	
	0	1	1	1	16800	

	1	0	0	0	19200	
	1	0	0	1	21600	
	1	0	1	0	24000	
	1	0	1	1	26400	
	1	1	0	0	28800	
	1	1	0	1	31200	
	1	1	1	0	33600	
	1	1	1	1	Disabled	
	Other settings: **Not used**					
4-7	**Not used**					Do not change the settings.

Switch 03		
No	**FUNCTION**	**COMMENTS**
0-1	Inch-mm conversion before tx Bit 1: 0, Bit 0: 0 = Inch-mm conversion available Bit 1: 0, Bit 0: 1 = Inch only Bit 1: 1, Bit 0: 0 = Not used Bit 1: 1, Bit 0: 1 = Disabled	The machine uses inch-based resolutions for scanning. If "inch only" is selected, the printed copy may be slightly distorted at the other end if that machine uses mm-based resolutions. If the setting is "Disabled", the bit switch setting is used.
2-3	DIS/NSF detection method Bit 3: 0, Bit 2: 0 = First DIS or NSF Bit 3: 0, Bit 2: 1 = Second DIS or NSF Bit 3: 1, Bit 2: 0 = Not used Bit 3: 1, Bit 2: 1 = Disabled	(0, 1): Use this setting if echoes on the line are interfering with the set-up protocol at the start of transmission. The machine will then wait for the second DIS or NSF before sending DCS or NSS. If the setting is "Disabled", the bit switch setting is used.

4	V.8 protocol 0: Off 1: Disabled	If transmissions to a specific destination always end at a lower modem rate (14,400 bps or lower), disable V.8 protocol so as not to use V.34 protocol. 0: V.34 communication will not be possible. If the setting is "Disabled", the bit switch setting is used.
5	Compression modes available in transmit mode 0: MH only 1: Disabled	This bit determines the capabilities that are informed to the other terminal during transmission. If the setting is "Disabled", the bit switch setting is used.
6-7	ECM during transmission Bit 7: 0, Bit 6: 0 = Off Bit 7: 0, Bit 6: 1 = On Bit 7: 1, Bit 6: 0 = Not used Bit 7: 1, Bit 6: 1 = Disabled	For example, if ECM is switched on but is not wanted when sending to a particular terminal, use the (0, 0) setting. Note ▪ V.8/V.34 protocol and JBIG compression are automatically disabled if ECM is disabled. ▪ If the setting is "Disabled", the bit switch setting is used.

Switch 04 - Not used (do not change the settings)
Switch 05 - Not used (do not change the settings)
Switch 06 - Not used (do not change the settings)
Switch 07 - Not used (do not change the settings)
Switch 08 - Not used (do not change the settings)
Switch 09 - Not used (do not change the settings)

E-mail Parameters

The initial settings of the following e-mail parameters are all "0" (all parameters disabled).

Switch 00		
No	**FUNCTION**	**COMMENTS**
0	MH Compression mode for e-mail attachments **0**: Off 1: On	Switches MH compression on and off for files attached to e-mails for sending.
1	MR Compression mode for e-mail attachments **0**: Off 1: On	Switches MR compression on and off for files attached to e-mails for sending.
2	MMR Compression mode for e-mail attachments **0**: Off 1: On	Switches MMR compression on and off for files attached to e-mails for sending.
3-6	**Not used**	Do not change these settings.
7	Designates the bits to reference for compression method of e-mail attachments **0**: Registered (Bit 0 to 6) 1: No registration.	The "0" selection (default) references the settings for Bits 00, 01, 02 above. The "1" selection ignores the selections of Bits 00, 01, 02.

Switch 01		
No	**FUNCTION**	**COMMENTS**
0	Original width of e-mail attachment: A4 **0**: Off 1: On	Sets the original width of the e-mail attachment as A4.
1	Original width of e-mail attachment: B4 **0**: Off 1: On	Sets the original width of the e-mail attachment as B4.
2	Original width of e-mail attachment: A3 **0**: Off 1: On	Sets the original width of the e-mail attachment as A3.
3-6	**Not used**	Do not change these settings.
7	Designates the bits to reference for original size of e-mail attachments **0**: Registered (Bit 0 to 6) 1: No registration.	The "0" selection (default) references the settings for Bits 00, 01, 02 above. The "1" selection ignores the selections of Bits 00, 01, 02.

Switch 02		
No	**FUNCTION**	**COMMENTS**
0	Line resolution of e-mail attachment: 200 x 100 **0**: Off 1: On	Sets the line resolution of the e-mail attachment as 200 x100.
1	Line resolution of e-mail attachment: 200 x 200 **0**: Off 1: On	Sets the line resolution of the e-mail attachment as 200 x 200.
2	Line resolution of e-mail attachment: 200 x 400 **0**: Off 1: On	Sets the line resolution of the e-mail attachment as 200 x 400.
3	Not used	Do not change these settings.
4	Line resolution of e-mail attachment: 400 x 400 **0**: Off 1: On	Sets the line resolution of the e-mail attachment as 400 x 400.
5-6	**Not used**	Do not change these settings.
7	Designates the bits to reference for original size of e-mail attachments **0**: Registered (Bit 0 to 6) 1: No registration.	The "0" selection (default) references the settings for Bits 00, 01, 02, 04 above. The "1" selection ignores the selections of Bits 00, 01, 02, 04.

Switch 03 - Not used (do not change the settings)

Switch 04		
No	**FUNCTION**	**COMMENTS**
0	Full mode address selection 0: Full mode address 1: No full mode (simple mode)	If the other ends have the addresses, which have the full mode function flag ("0"), this machine determines them as full mode standard machines. ▪ This machine attaches the "demand of reception confirmation" to a message when transmitting. ▪ This machine updates the reception capability to the address book when receiving.
1-7	**Not used**	Do not change these settings.

Switch 05		
No	**FUNCTION**	**COMMENTS**
0	Directr transmission selection to SMTP server 0: ON 1: OFF	Allows or does not allow the direct transmission to SMTP server.
1-7	Not used	Do not change these settings.

Switch 06 - Not used (do not change the settings)
Switch 07 - Not used (do not change the settings)
Switch 08 - Not used (do not change the settings)
Switch 09 - Not used (do not change the settings)

4.6 SERVICE RAM ADDRESSES

⚠CAUTION

- Do not change the settings which are marked as "Not used" or "Read only".

680001 to 680004(H) - ROM version (Read only)

680001(H) - Revision number (BCD)

680002(H) - Year (BCD)

680003(H) - Month (BCD)

680004(H) - Day (BCD)

680006 to 680015(H) - Machine's serial number (16 digits - ASCII)

680018(H) - Total program checksum (low)

680019(H) - Total program checksum (high)

680020 to 68003F(H) - System bit switches

680050 to 68005F(H) - Printer bit switches

680060 to 68007F(H) - Communication bit switches

680080 to 68008F(H) - G3 bit switches

680090 to 68009F(H) - G3-2 bit switches: Not used

6800A0 to 6800AF(H) - G3-3 bit switches: Not used

6800D0(H) - User parameter switch 00 (SWUER_00) : Not used

6800D1(H) - User parameter switch 01 (SWUSR_01) : Not used

6800D2(H) - User parameter switch 02 (SWUSR_02)

Bit 0: Forwarding mark printing on forwarded messages 0: Disabled, 1: Enabled

Bit 1: Center mark printing on received copies

(This switch is not printed on the user parameter list.)

0: Disabled, 1: Enabled

Bit 2: Reception time printing

(This switch is not printed on the user parameter list.)

0: Disabled, 1: Enabled

Bit 3: TSI print on received messages 0: Disabled, 1: Enabled

Bit 4: Checkered mark printing

(This switch is not printed on the user parameter list.)

0: Disabled, 1: Enabled

Bit 5: Not used

Bit 6: Not used

Bit 7: Not used

6800D3(H) - User parameter switch 03 (SWUSR_03: Automatic report printout)

Bit 0: Transmission result report (memory transmissions) 0: Off, 1: On

Bit 1: Not used

Bit 2: Memory storage report 0: Off, 1: On

Bit 3: Polling reserve report (polling reception) 0: Off, 1: On

Bit 4: Polling result report (polling reception) 0: Off, 1: On

Bit 5: Transmission result report (immediate transmissions) 0: Off, 1: On

Bit 6: Not used

Bit 7: Journal 0: Off, 1: On

6800D4(H) - User parameter switch 04 (SWUSR_04: Automatic report printout)

Bit 0: Not used

Bit 1: Automatic communication failure report and transfer result report output 0: Off, 1: On

Bits 2 to 3: Not used

Bit 4: Indicates the parties 0: Not indicated, 1: Indicated

Bit 5: Include sender's name on reports 0: Off, 1: On

Bit 6: Not used

Bit 7: Inclusion of a sample image on reports 0: Off, 1: On

6800D5(H) - User parameter switch 05 (SWUSR_05)

Bit 0: Substitute reception when the base copier is in an SC condition

0: Enabled, 1: Disabled

Bits 1 and 2: Condition for substitute rx when the machine cannot print messages (Paper end, toner end, jam, and during night mode)

Bit 2: 0, Bit 1: 0 = The machine receives all the fax messages.

Bit 2: 0, Bit 1: 1 = The machine receives the fax messages with RTI or CSI.

Bit 2: 1, Bit 1: 0 = The machine receives the fax messages with the same ID code.

Bit 2: 1, Bit 1: 1 = The machine does not receive anything.

Bit 3: Not used

Bit 4: Not used

Bit 5: Just size printing 0: Off, 1: On

Bit 6: Not used

Bit 7: Add paper display when a cassette is empty 0: Off, 1: On

6800D6(H) - User parameter switch 06 (SWUSR_06): Not used

6800D7(H) - User parameter switch 07 (SWUSR_07)

Bit 0 Ringing 0: Off, 1: On

Bit1: Automatic answering message 0: Off, 1: On

Bit 2: Parallel memory transmission 0: Off, 1: On

Bits 3 and 4: Not used

Bit 5: Remote control 0: Off, 1: On

Bits 6 and 7: Not used

6800D8(H) - User parameter switch 08 (SWUSR_08)

Bits 0 and 1: Not used.

Bit 2: Authorized reception

0: Only faxes from senders whose RTIs/CSIs are specified for this feature are accepted.

1: Only faxes from senders whose RTIs/CSIs are not specified for this feature are accepted.

Bits 3 to 7: Not used.

6800D9(H) - User parameter switch 09 (SWUSR_09): Not used

6800DA(H) - User parameter switch 10 (SWUSR_0A)

Bits 0 to 2: Not used

Bit 3: Page reduction 0: Off, 1: On

Bits 4 and 5: Not used

Bit 6: Use both e-mail notification and printed reports to confirm the transmission results 0: Off, 1: On

Bit 7: Not used

6800DB(H) - User parameter switch 11 (SWUSR_0B)

Bits 0 and 1: Not used

Bit 2: White original detection 0: Off, 1: On (alarm and alert message on the LCD)

Bit 3: Receive rejection for 1300 Hz transmission 0: Off (receive), 1: On (not receive)

Bit 5: Not used

Bit 6: Printout of messages received while acting as a forwarding station 0: Off, 1: On

Bit 7: Not used

6800DC(H) - User parameter switch 12 (SWUSR_0C): Not used

6800DD(H) - User parameter switch 13 (SWUSR_0D): Not used

6800DE(H) - User parameter switch 14 (SWUSR_0E)

Bit 0: Message printout while the machine is in Night Printing mode 0: On, 1: Off

Bit 1: Maximum document length detection 0: Double letter, 1: Longer than double-letter (well log) – up to 1,200 mm

Bit 2: Not used

Bit 3: Fax mode settings, such as resolution, before a mode key (Copy/Fax/Printer/Scanner) is pressed 0: Not cleared, 1: Cleared

Bits 4 to 6: Not used

Bit 7: Not used

6800DF(H) - User parameter switch 15 (SWUSR_0F)

(This switch is not printed on the user parameter list.)

Bits 0, 1 and 2: Cassette for fax printout

Bit 2: 0, Bit 1: 0, Bit 0: 1 = 1st paper feed station

Bit 2: 0, Bit 1: 1, Bit 0: 0 = 2nd paper feed station

Bit 2: 0, Bit 1: 1, Bit 0: 1 = 3rd paper feed station

Bit 2: 1, Bit 1: 0, Bit 0: 0 = 4th paper feed station

Bit 2: 1, Bit 1: 0, Bit 0: 1 = LCT

Other settings Not used

Bits 3 and 4: Not used

Bit 5: Using the cassette specified by bits 0, 1 and 2 above only 0: On, 1: Off

Bits 6 and 7: Not used

6800E0(H) – User parameter switch 16 (SWUSR_10)

(This switch is not printed on the user parameter list.)

Bits 0 and 1: Not used

Bit 2: Paper size selection priority for an A4 size fax message when A4/LT size paper is not available. 0: A3 has priority, 1: B4 has priority

Bits 3 to 7: Not used

6800E1(H) – User parameter switch 17 (SWUSR_11)

Bit 0: Not used

Bit 1: Not used

Bit 2: Inclusion of the "Add" button when a sequence of Quick/Speed dials is selected for broadcasting 0:Not needed, 1: Needed

Bits 3 to 6: Not used

Bit 7: Press "Start" key without an original when using the on hook dial or the external telephone,

0: displays "Cannot detect original size". 1: Receives fax messages.

6800E2(H) - User parameter switch 18 (SWUSR_12)

Bit 0: TTI date 0: Off, 1: On

Bit 1: TTI sender 0: Off, 1: On

Bit 2: TTI file number 0: Off, 1: On

Bit 3: TTI page number 0: Off, 1: On

Bits 4 to 6: Not used

Bit 7: Japan only

6800E3(H) - User parameter switch 19 (SWUSR_13)

Bit 0: Not used

Bit 1: Journal format

0: The Journal is separated into transmissions and receptions

1: The Journal is separated into G3-1, G3-2, and G3-3 communications

Bit 2: Not used

Bit 3: 90° image rotation during B5 portrait Tx (This switch is not printed on the user parameter list.) 0: Off, 1: On

Bit 4: Reduction of sample images on reports to 50% in the main scan and sub-scan directions. (This switch is not printed on the user parameter list.) 0: Technician adjustment (printer switch 0E bits 3 and 4), 1: 50% reduction

Bit 5: Use of A5 size paper for reports (This switch is not printed on the user parameter list.) 0: Off, 1: On

Bits 6 and 7: Not used

6800E4(H) - User parameter switch 20 (SWUSR_14)

Bit 0: Automatic printing of the LAN fax result report 0: Off, 1: On

Bit 1: Not used.

Bits 2 to 5: Store documents in memory which could not be printed from PC fax (LAN fax) driver

Bit 5	Bit 4	Bit 3	Bit 2	Setting
0	0	0	0	0 min.
0	0	0	1	1 min.
↓	↓	↓	↓	↓
1	1	1	0	14 min.
1	1	1	1	15 min.

Bits 6 and 7: Not used.

6800E5(H) - User parameter switch 21 (SWUSR_15)

Bit 0: Print results of sending reception notice request message 0: Disabled (print only when error occurs), 1: Enabled

Bit 1: Respond to e-mail reception acknowledgment request 0: Disabled, 1: Enabled

Bit 2: Not used

Bit 3: File format for forwarded folders 0: TIFF, 1:PDF

Bit 4: Transmit Journal by E-mail 0: Disabled, 1: Enabled

Bit 5: Not used

Bit 6: Network error display 0: Displayed, 1: Not displayed

Bit 7: Transmit error mail notification 0: Enabled, 1: Disabled

6800E6(H) - User parameter switch 22 (SWUSR_16)

(This switch is not printed on the user parameter list.)

Bit 0: Dial tone detection (PSTN 1) 0: Disabled, 1: Enabled

Bits 1 to 7: Not used

6800E7(H) – User parameter switch 23 (SWUSR_17): Not used

6800E8(H) - User parameter switch 24 (SWUSR_18): Not used

6800E9(H) - User parameter switch 25 (SWUSR_19)

Bit 0: Not used

Bit 1: Reception mode switch timer 0: Off, 1: On (switching Fax or Fax/Tel)

Bit 2: Mode priority switch 0: Fax first, 1: Tel first

Bit 3: Dial in function (Japan Only)

Bit 4: RDS operation 0: Not acceptable, 1: Acceptable for the limit specified by system switch 03

Note

- This bit is only effective when RDS operation can be selected by the user (see system switch 02).

Bits 5 to 7: Not used

6800EA(H) and 6800EB(H) - User parameter switches 26 and 27 (SWUSR_1A and 1B): Not used

6800EC(H) - User parameter switch 28(SWUSR_1C)

Xxxxx

6800ED(H) - User parameter switch 29(SWUSR_1D)

xxxxxx

6800EE(H) and 6800EF(H) - User parameter switches 30 and 31 (SWUSR_1E and 1F): Not used

6800F0(H) - User parameter switch 32 (SWUSR_20)

Bit 0: Quotation priority for a destination when there is no destination of the specified type

0: Paper output priority = Priority order: 1. IP-fax destination, 2. Fax Number, 3. E-mail address, 4. Folder

1: Electric putout order = Priority order: 1. E-mail address, 2. Folder, 3. IP-fax destination, 4. Fax number

Bits 1 to 7: Not used

6800F1(H) - User parameter switch 33 (SWUSR_21): Not used

6800F2(H) - User parameter switch 34 (SWUSR_22)

Bit 0: Gatekeeper server used with IP-Fax 0: Disabled, 1: Enabled

Bit 1: SIP server used with IP-Fax 0: Disabled, 1: Enabled

Bits 2 to 7: Not used

680100 to 68010F(H) - G4 Parameter Switches – Not used

680110 to 68012F(H) - G4 Internal Switches – Not used

680130 to 68016F(H) - Service Switches

680170 to 68017F(H) - IFAX Switches

680180 to 68018F(H) - IP-FAX Switches

680190 to 6801AF(H) - Service station's fax number (SP3-101)

6801B0 to 6801B9(H) - Own fax PABX extension number

6801BA to 6801C3(H) - Own fax number (PSTN) – Not used

6801C4 to 6801D7(H) - Own fax number (ISDN G4) – Not used

6801D8 to 6801E3(H) - The first subscriber number (ISDN G3) – Not used

6801E4 to 6801EF(H) - The second subscriber number (ISDN G3) – Not used

6801F0 to 6801FB(H) - The first subscriber number (ISDN G4) – Not used

6801FC to 680207(H) - The second subscriber number (ISDN G4) – Not used

680208 to 68021B(H) - PSTN-1 RTI (Max. 20 characters - ASCII) - See the following note.

68021C to 68022F(H) - PSTN-2 RTI (Max. 20 characters - ASCII) - Not used

680230 to 680246(H) - PSTN-3 RTI (Max. 20 characters - ASCII) - Not used

680247 to 680286(H) - TTI 1 (Max. 64 characters - ASCII) - See the following note.

680287 to 6802C6(H) - TTI 2 (Max. 64 characters - ASCII) - Not used

6802C7 to 680306(H) - TTI 3 (Max. 64 characters - ASCII) - Not used

680307 to 68031A(H) - PSTN-1 CSI (Max. 20 characters - ASCII)

68031B to 68032E(H) - PSTN-2 CSI (Max.20 characters - ASCII) - Not used

68032F to 680342(H) - PSTN-3 CSI (Max.20 characters - ASCII) - Not used

680343(H) - Number of PSTN-1 CSI characters (Hex)

680344(H) - Number of PSTN-2 CSI characters (Hex) - Not used

680345(H) Number of PSTN-3 CSI characters (Hex) - Not used

Note

- If the number of characters is less than the maximum (20 for RTI, 32 for TTI), add a stop code (00[H]) after the last character.

680380 to 680387(H) - Last power off time (Read only)

680380(H) - 01(H) - 24-hour clock, 00(H) - 12-hour clock (AM), 02(H) - 12-hour clock (PM)

680381(H) - Year (BCD)

680382(H) - Month (BCD)

680383(H) - Day (BCD)

680384(H) – Hour

680385(H) – Minute

680386(H) – Second

680387(H) - 00: Monday, 01: Tuesday, 02: Wednesday, /// , 06: Sunday

680394(H) - Optional equipment (Read only – Do not change the settings)

Bit 0: Page Memory 0: Not installed, 1: Installed

Bit 1: SAF Memory 0: Not installed, 1: Installed

Bits 2 to 7; Not used

680395(H) - Optional equipment (Read only – Do not change the settings)

Bits 0 to 3: Not used

Bit 4: G3-2 0: Not installed, 1: Installed

Bit 5: G3-3 0: Not installed, 1: Installed

Bit 6 and 7: Not used

680406 to 68040A – Option G3 board (G3-2) ROM information (Read only)

680406(H) - Suffix (BCD)

680407(H) - Version (BCD)

680408(H) - Year (BCD)

680409(H) - Month (BCD)

68040A(H) - Day (BCD)

68040B to 68040F – Option G3 board (G3-3) ROM information (Read only)

68040B(H) - Suffix (BCD)

68040C(H) - Version (BCD)

68040D(H) - Year (BCD)

68040E(H) - Month (BCD)

68040F(H) - Day (BCD)

680410(H) - G3-1 Modem ROM version (Read only)

680412(H) - G3-2 Modem ROM version (Read only)

680414(H) - G3-3 Modem ROM version (Read only)

680420(H) - Number of multiple sets print (Read only)

680476(H) - Time for economy transmission (hour in 24h clock format - BCD)

680477(H) - Time for economy transmission (minute - BCD)

680492(H) - Transmission monitor volume 00 - 07(H)

680493(H) - Reception monitor volume 00 - 07(H)

680494(H) - On-hook monitor volume 00 - 07(H)

680495(H) - Dialing monitor volume 00 - 07(H)

680496(H) - Buzzer volume 00 - 07(H)

680497(H) - Beeper volume 00 - 07(H)

6804A8(H) - Machine code (Check ram 4)

6805DE

68918E(H) - Gatekeeper server address - Main (Max. 128 characters - ASCII)

68920E(H) - Gatekeeper server address - Sub (Max. 128 characters - ASCII)

68928E(H) - Arias Number (Max. 128 characters - ASCII)

68930E(H) - SIP user name (Max. 128 characters - ASCII)

68938E(H) - SIP digest authentication password (Max. 128 characters - ASCII)

68940E(H) - Gateway address information (Max. 7100 characters - ASCII)

68AFCA(H) - Stand-by port number for H.232 connection

68AFCCH) - Stand-by port number for SIP connection

68AFCE(H) - RAS port number

68AFD0(H) - Gatekeeper port number

68AFD2(H) - Port number of data waiting for T.38

68AFD4(H) - Port number of SIP server

68AFD6(H) - Priority for SIP and H.323 0: H.323, 1: SIP

68AFD7(H) - SIP function 0: Disabled, 1: Enabled

68AFD8(H) - H.323 function 0: Disabled, 1: Enabled

68AFD9(H) - SIP digest authentication function 0: Disabled, 1: Enabled

68AFDA(H) - IP-Fax backup data 00 - 600 (H) - Not used

69ED6A(H) to 69ED92(H) - SIP server address (Read only)

69ED6A(H) - Proxy server - Main (Max. 128 characters - ASCII)

69ED72(H) - Proxy server - Sub (Max. 128 characters - ASCII)

69ED7A(H) - Redirect server - Main (Max. 128 characters - ASCII)

69ED82(H) - Redirect server - Sub (Max. 128 characters - ASCII)

69ED8A(H) - Registrar server - Main (Max. 128 characters - ASCII)

69ED92(H) - Registrar server - Sub (Max. 128 characters - ASCII)

6BEBFE(H) - 6BEC1E (H) - Dial tone detection parameter (Max. 11 x 3 lines)

This initializes following order. [0x04, 0x40, 0x03, 0x60, 0x64, 0xf4, 0x01,0x64, 0x04, 0xc8, 0x00]

6BEBFE(H) – Dial tone detection frequency – Upper limit (High)

Defaults: NA: 06, EU: 06, ASIA: 06

6BEBFF(H) – Dial tone detection frequency – Upper Limit (Low)

Defaults: NA: 50, EU: 50, ASIA: 50

6BEC00(H) – Dial tone detection frequency – Lower Limit (High)

Defaults: NA: 03, EU: 02, ASIA: 02

6BEC01(H) – Dial tone detection frequency – Lower Limit (Low)

Defaults: NA: 60, EU: 90, ASIA: 90

6BEC02(H) –Dial tone detection waiting time (20 ms)

Defaults: NA: 64, EU 64, ASIA: 64

6BEC03 to 6BEC04 – Dial tone detection monitoring time (20 ms)

Defaults

Area	6BEC03	6BEC04
NA	F4	01
EU	F4	01
ASIA	F4	01

6BEC05(H) – Dial tone detect judge time (20 ms)

Defaults: NA: 64, EU: 1B, ASIA: 32

6BEC06(H) – Dial tone disconnect permission time (20 ms)

Defaults: NA: 11, EU: 0F, ASIA: 11

5. SPECIFICATIONS

5.1 GENERAL SPECIFICATIONS

5.1.1 FCU

Type:	Desktop type transceiver
Circuit:	PSTN PABX
Connection:	Direct couple
Original Size:	Book (Face down) Maximum Length: 356 mm [14 inch] Maximum Width: 216 mm [8.5 inch] ARDF (Face up) (Single-sided document) Length: 139 - 1200 mm [5.5 - 47.2 inch] Width: 139 - 216 mm [5.5 - 8.5 inch] (Double-sided document) Length: 160 - 356 mm [6.3 - 14.0 inch] Width: 139 - 216 mm [5.5 - 8.5 inch]
Scanning Method:	Flat bed, with CCD
Resolution:	G3: 8 x 3.85 lines/mm, 200 x 100 dpi (Standard character), 8 x 7.7 lines/mm, 200 x 200 dpi (Detail character), 8 x 15.4 lines/mm (Fine character: optional), 16 x 15.4 lines/mm, 400 x 400 dpi (Super Fine character: optional) Note ▪ Optional Expansion Memory required
Transmission Time:	G3: 3 s at 28800 bps; Measured with G3 ECM using memory for an ITU-T #1 test document (Slerexe letter) at standard resolution

Data Compression:	MH, MR, MMR, JBIG
Protocol:	Group 3 with ECM
Modulation:	V.34, V.17 (TCM), V.29, V.17 (QAM), V.27ter (PHM), V.8, V.21 (FSK)
Data Rate:	G3: 33600/31200/28800/26400/24000/21600/ 19200/16800/14400/12000/9600/7200/4800/2400 bps Automatic fallback
I/O Rate:	With ECM: 0 ms/line Without ECM: 2.5, 5, 10, 20, or 40 ms/line
Memory Capacity:	ECM: 128 KB SAF Standard: 4 MB With optional Expansion Memory: 28 MB Page Memory Standard: 4 MB (Print: 2 MB + Scanner: 2 MB) With optional Expansion Memory: 8 MB (Print 4 MB + Scanner: 4 MB)

5.1.2 CAPABILITIES OF PROGRAMMABLE ITEMS

The following table shows the capabilities of each programmable items.

Item	Max.
Total Destinations in Address Book	2000
Groups	100
Destination per Group	500
Destinations for All Files	500
Programs	100
Auto Document	6
Special Senders	30
Specific Senders	30

The following table shows how the capabilities of the document memory will change after the Expansion Memory are installed.

	Without the Expansion Memory	With the Expansion Memory
Memory Transmission file	400	400
Maximum number of page for memory transmission	1000	1000
Memory capacity for memory transmission (See the Note below)	320	2240

Note

- Measured using an ITU-T #1 test document (Slerexe letter) at standard resolution, auto image density mode, and Text mode.

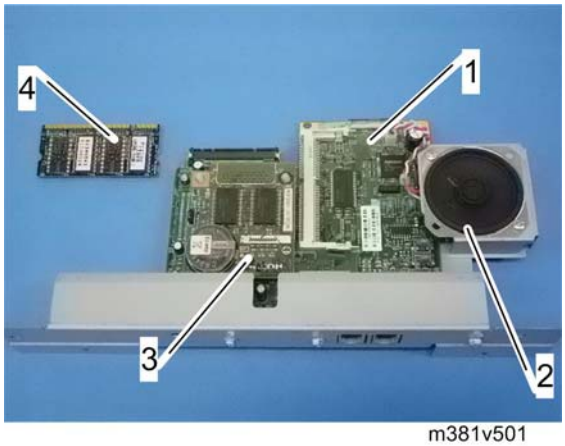
5.2 IFAX SPECIFICATIONS

Connectivity:	Local area network Ethernet 100base-Tx/10base-T IEEE802.11a/g (wireless LAN), 1000 Base-T
Resolution:	Main scan: 400 dpi, 200 dpi Sub scan: 400 dpi, 200 dpi, 100 dpi Note ▪ To use 400 dpi, IFAX SW01 Bit 4 must be set to “1”.
Transmission Time:	1 s (through a LAN to the server) Condition: ITU-T #1 test document (Selerexe Letter) MTF correction: OFF TTI: None Resolution: 200 x 100 dpi Communication speed: 10 Mbps Correspondent device: E-mail server Line conditions: No terminal access
Document Size:	Maximum message width is A4/LT.
E-mail File Format:	Single/multi-part MIME conversion Image: TIFF-F (MH, MR, MMR)
Protocol:	**Transmission:** SMTP, TCP/IP **Reception:** POP3, SMTP, IMAP4, TCP/IP
Data Rate:	100 Mbps(100base-Tx) 10 Mbps (10base-T)
Authentication Method:	SMTP-AUTH POP before SMTP A-POP
Remark:	The machine must be set up as an e-mail client before installation. Any client PCs connected to the machine through a LAN must also be e-mail clients, or some features will not work (e.g. Autorouting).

5.3 IP-FAX SPECIFICATIONS

Network:	Local Area Network Ethernet/10base-T, 100base-TX IEEE802.11a/g (wireless LAN), 1000 Base-T
Scan line density:	8 x 3.85 lines/mm, 200x100dpi (standard character), 8 x 7.7lines/mm, 200x200dpi (detail character), 8 x 15.4lines/mm (fine character: optional expansion memory required), 16 x 15.4lines/mm, 400x400dpi (super fine character: optional expansion memory required)
Original size:	A4
Maximum scanning size:	A4, 216 x 356 mm, Irregular, 216 x 1200 mm
Transmission protocol:	Recommendation: T.38, TCP, UDP/IP communication, SIP (RFC 3261 compliant), H.323 v2
Compatible machines:	IP-Fax compatible machines
IP-Fax transmission function:	Specify IP address and send fax to an IP-Fax compatible fax through a network. Also capable of sending fax from a G3 fax connected to the public telephone lines via a VoIP gateway.
IP-Fax reception function:	Receive a fax sent from an IP-Fax compatible fax through a network. Also capable of receiving fax from a G3 fax connected the public telephone lines via a VoIP gateway.

5.4 FAX UNIT CONFIGURATION



m381v501

Component	Code	No.	Remarks
MBU	M381	3	Included with the fax unit
GWFCU		1	
Speaker		2	
Expansion Memory	G578	4	Optional for M381

M375/M376/M386/M389
PAPER FEED UNIT
TK1090/TK1100/TK1120/TK1130

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

PAPER FEED UNIT
TK1090/TK1100/TK1120/TK1130
(M375/M376/M386/M389)

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READ THIS FIRST

Safety and Symbols

Replacement Procedure Safety

⚠CAUTION

- Turn off the main power switch and unplug the machine before beginning any of the replacement procedures in this manual.

Symbols Used in this Manual

This manual uses the following symbols.

☛: See or Refer to

: Screws

: Connector

: Clamp

: Clip ring

: E-ring

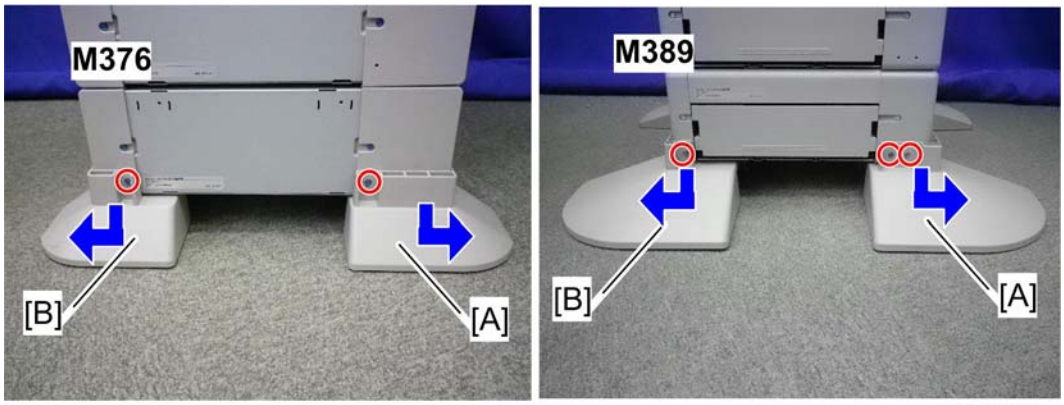
1. REPLACEMENT AND ADJUSTMENT

1.1 EXTERNAL COVERS

CAUTION

- Turn off the main power switch and unplug the machine before attempting any procedure in this section.

1.1.1 CASTER COVERS (M376/M389 ONLY)

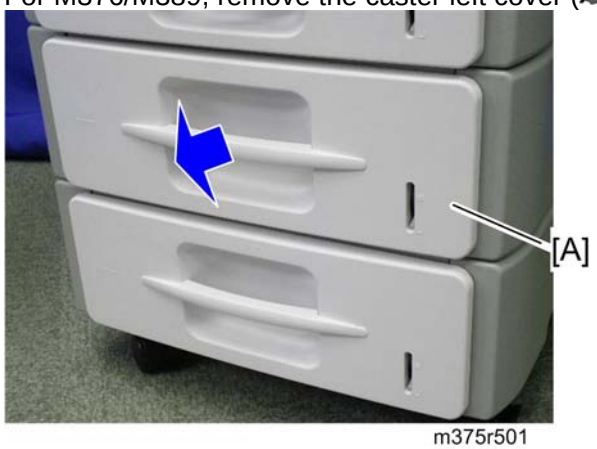


m375r500

1. Caster left cover [A] (M376: x 1, M389: x 2, bracket x 1)
2. Caster right cover [B] (x 1)

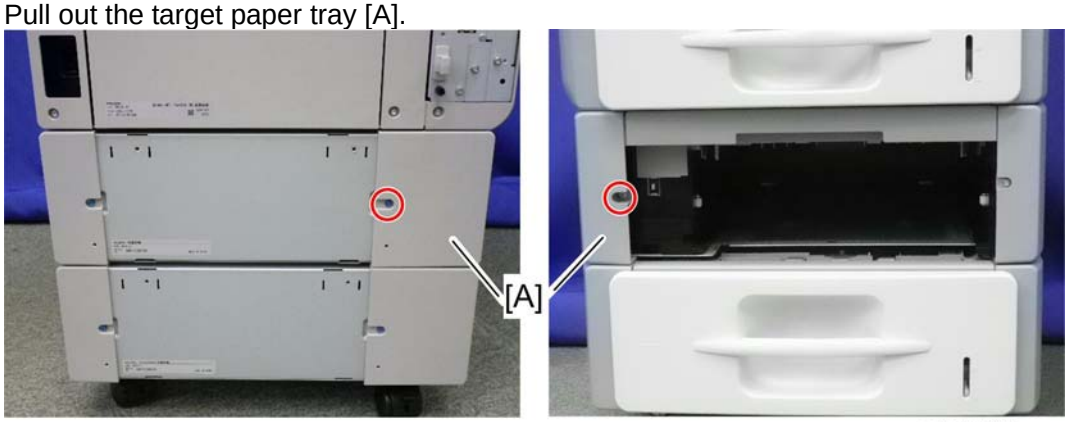
1.1.2 LEFT COVER

1. For M376/M389, remove the caster left cover (☛p.1).



m375r501

2. Pull out the target paper tray [A].



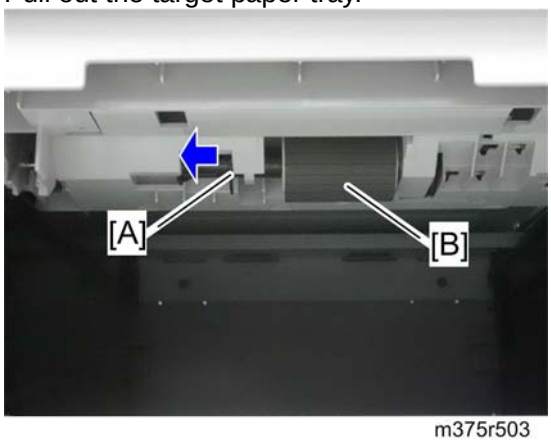
m375r502

3. Left cover [A] (x 2)

1.2 PAPER FEED

1.2.1 PAPER FEED ROLLER

1. Pull out the target paper tray.

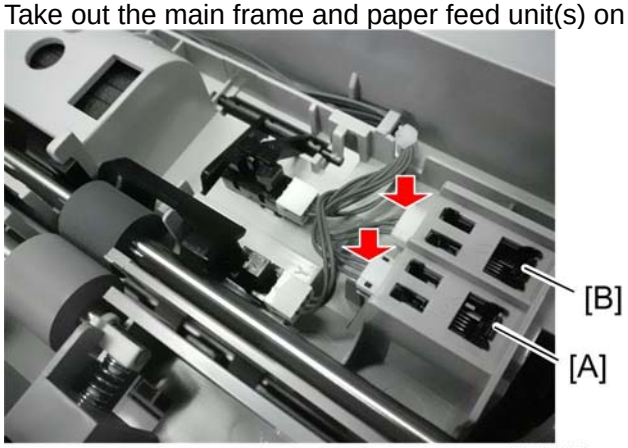


m375r503

2. Slide the paper feed roller holder [A] to the left.
3. Paper feed roller [B]

1.2.2 REMAINING PAPER SENSORS

1. Take out the main frame and paper feed unit(s) on the target paper feed unit.

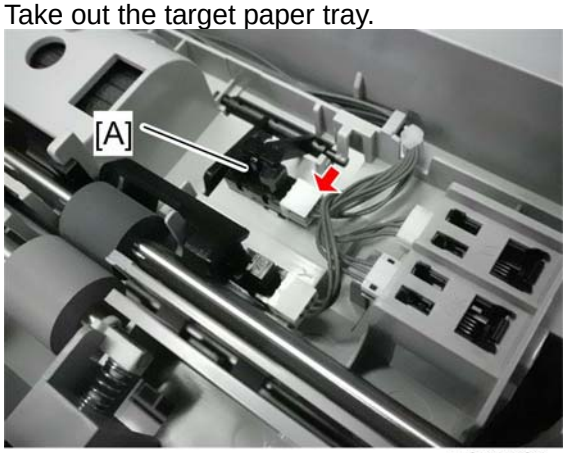


m375r504

2. Remaining paper sensor 1 [A] (hooks, x 1)
   - Use the black connector when reassembling the remaining paper sensor 1.
3. Remaining paper sensor 2 [B] (hooks, x 1)
   - Use the white connector when reassembling the remaining paper sensor 2.

1.2.3 PAPER END SENSOR

1. Take out the main frame and paper feed unit(s) on the target paper feed unit.
2. Take out the target paper tray.

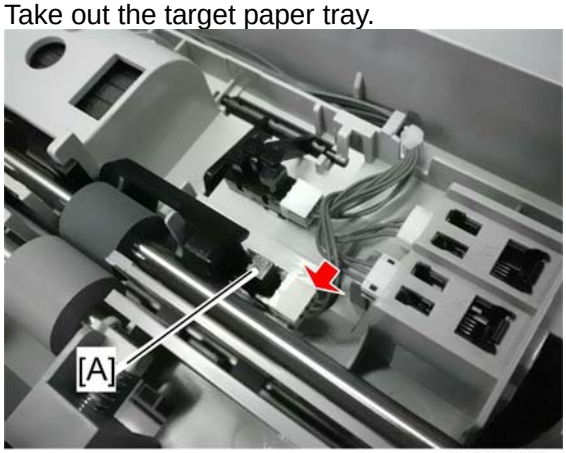


m375r505

3. Paper end sensor [A] (hooks, x 1)

1.2.4 VERTICAL TRANSPORT SENSOR

1. Take out the main frame and paper feed unit(s) on the target paper feed unit.
2. Take out the target paper tray.



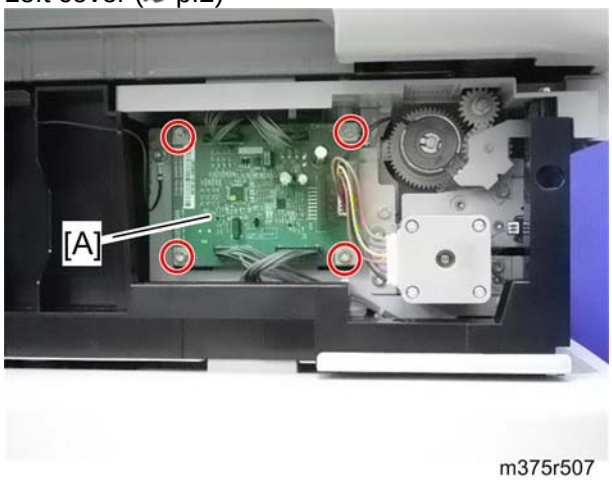
m375r506

1. Paper end sensor [A] (hooks, x 1)

1.3 ELECTRICAL COMPONENTS

1.3.1 DRIVE BOARD

1. Left cover (☛p.2)

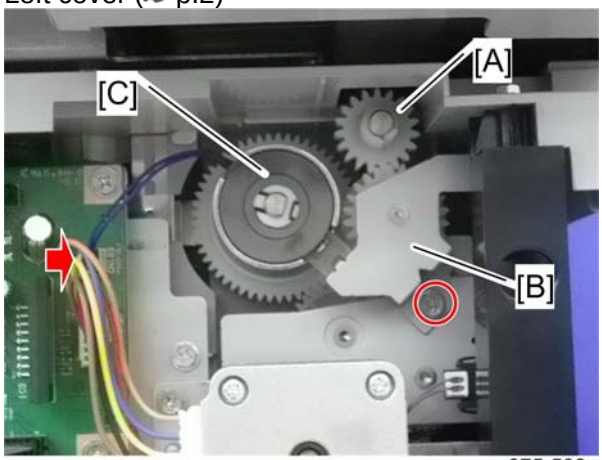


m375r507

2. Drive board [A] (x all, x 4)

1.3.2 PAPER FEED CLUTCH

1. Left cover (☛p.2)

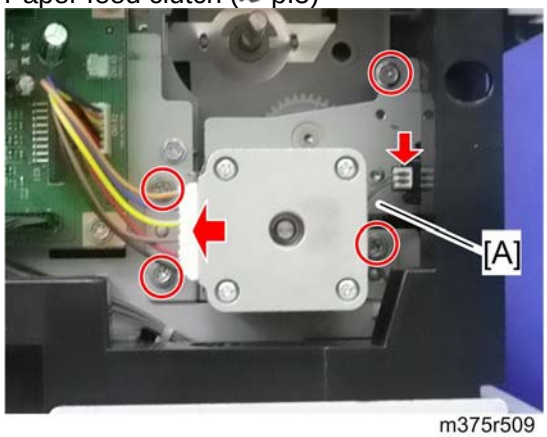


m375r508

2. Gear [A] (hook)
3. Gear bracket [B] (x 1)
4. Paper feed clutch [C] (x 1)

1.3.3 PAPER FEED MOTOR

1. Left cover (☛p.2)
2. Paper feed clutch (☛p.5)



m375r509

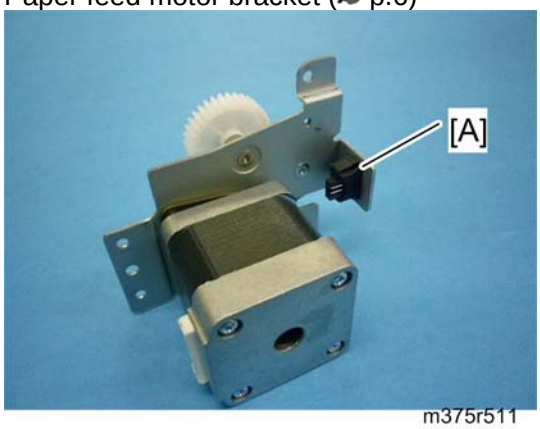
3. Paper feed motor bracket [A] (x 2, x 4)

m375r510

4. Paper feed motor [A] (x 2, timing belt x 1)

1.3.4 PAPER TRAY SET SWITCH

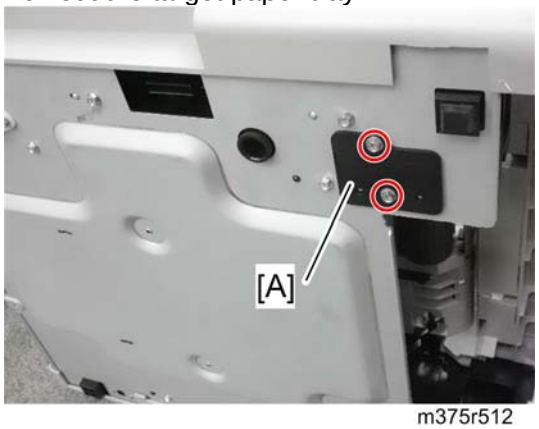
1. Paper feed motor bracket (☛p.6)



2. Paper tray set switch [A] (hooks)

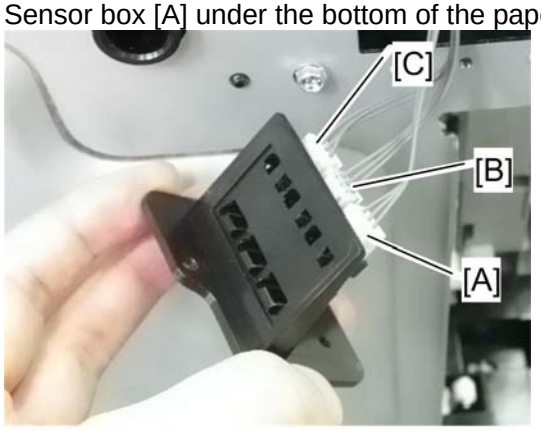
1.3.5 PAPER SIZE SENSORS

1. Remove the target paper feed unit.
2. Pull out the target paper tray.



m375r512

3. Sensor box [A] under the bottom of the paper feed unit (x 2)



m375r513

4. Paper size sensor 1 [A], 2 [B], 3 [C] (x 1, hooks each)
   - Use the white connector when reassembling the paper size sensor 1.
   - Use the blue connector when reassembling the paper size sensor 2.
   - Use the yellow connector when reassembling the paper size sensor 3.